Computer Integrated Documentation - PRO 4.02

User Manual

CTS GmbH
Lotzenäcker 21
72379 Hechingen

CTS GmbH CID-Pro 4.02 User Manual
Rev. 2013-04-15

©1997-2013
CTS GmbH • Lotzenäcker 21 • 72379 Hechingen • Germany
http://www.cts-umweltsimulation.de

Text, figures, and examples were created with the greatest care. The issuer assumes neither legal nor any other liability for erroneous information and its consequences.

This document is copyright protected. All rights reserved. No part of this documentation may be reproduced in any form, by photocopy, microfilm, or other processes, or translated into a language usable by machines, particularly data processing equipment, without the issuer's written consent. The rights to reproduce via lecture, radio, and television are also reserved.

Microsoft, Windows and Windows NT, Windows 2000, Windows XP, Windows 2003, Windows Vista, Windows 7 and Windows 8 are registered trademarks of the Microsoft Corp., Redmond, USA. CTS and the CTS logo are registered trademarks of the CTS GmbH, Hechingen, Germany.

1 Table of Contents

1 Table of Contents 3

2 Installation and system requirements 7
2.1 Licensing notes 7
2.2 System requirements 7
2.3 Authorizations 7
2.4 Installation 8
2.4.1 CID-Pro 4.02 10
2.4.2 Driver for the hardware key (dongle) 12
2.4.3 ASCII protocol test program 13
2.4.3.1 ASCII protocol for the serial interface 13
2.4.3.2 ASCII protocol for the Ethernet interface 14
2.4.4 Manuals and Adobe Acrobat Reader 14
2.5 Uninstall 15

3 Program start-up 17
3.1 Software 17
3.2 Units 17

4 Program parts and functions 19
4.1 Status overview 19
4.1.1 Preface 19
4.1.2 Symbol and menu bar 20
4.1.3 Test Units 21
4.1.4 Unit information 22
4.1.5 Unit and error status 23
4.1.6 Program automatic 26
4.1.7 Trend graph 27
4.1.8 Messages (change, warning, and error messages) 29
4.1.9 Digital channels 30
4.1.10 Analogues channels 31
4.1.11 Disable control terminal 32
4.1.12 Error list 33
4.2 Configuration (CID-Pro 4.02 - Settings) 35
4.2.1 Settings 35
4.2.2 Communication 36
4.2.2.1 Help for adding Test Units into software 40
4.2.3 Program mode (temporary/transient display) 41
4.2.4 Test specimen protection 43
4.2.5 Generally 44
4.2.6 Login Option 46
4.2.6.1 Simple password 46
4.2.6.2 Access Configuration - Settings 48
4.2.6.3 Access Configuration - In runtime operation 53
4.2.7 PDF Settings 54
4.3 Overview of all test units 55
4.4 Test-cycle program editor 57
4.4.1 Preface 57
4.4.2 Buttons 59

4.4.3 Generate a test cycle 60
4.4.3.1 Edit lines (insert, change, delete, cut, and copy) with keyboard/menu functions 60
4.4.3.2 Insert line and change graph with the mouse 64
4.4.4 Functions 69
4.4.4.1 New test program 69
4.4.4.2 Open test program 69
4.4.4.3 Save (as) test program 70
4.4.4.4 Delete test program 70
4.4.4.5 Printer/page setup and print … 71
4.4.4.6 Print as PDF... 72
4.4.4.7 Copy/insert a block of lines / delete a block of lines 72
4.4.4.8 Loop (loop beginning and end) 74
4.4.4.9 Call Subprogram 75
4.4.4.10 Conditional jump 76
4.4.4.11 Insert Program 77
4.4.4.12 Templates 78
4.4.4.13 Editor options 79
4.4.4.14 Set Gradient 82
4.4.4.15 Save file in data pool 86
4.4.4.16 Save file as library 86
4.4.4.17 Editor comments 87
4.4.4.18 Editor zoom functions 88
4.5 Graphical measurement-data analysis 91
4.5.1 Preface 91
4.5.2 Buttons 92
4.5.3 Graphical measurement-data analysis functions 93
4.5.3.1 Open and load measurement 93
4.5.3.2 Working with graphical measurement-data analysis 95
4.5.3.3 Delete measurement 95
4.5.3.4 Print measurement 96
4.5.3.5 Print measurement as PDF 96
4.5.3.6 Zoom functions (graphical measurement-data analysis) 97
4.5.3.7 Display 99
4.5.3.8 Analysis 99
4.5.3.9 Options (graphical measurement-data analysis) 100
4.5.3.10 Excel conversion program 103
4.5.3.11 Display Measurement Values 106
4.5.3.12 Copy to clipboard 106
4.5.3.13 Merge measurement files 107
4.5.3.14 Cut current Measurement File (Cursor) 107
4.5.3.15 Settings 108
4.5.3.16 Comments (graphical measurement-data analysis) 110
4.6 Starting test programs (automatic) 111
4.6.1 Selection the test-cycle program 111
4.6.2 Recording the test-cycle program 112
4.6.3 Start options 114
4.6.4 Automatic mode 115
4.7 Manual measurement recording 117
4.7.1 Starting a manual measurement recording 117
4.7.2 Stopping a manual measurement recording 122
4.8 Operating hours and event counter 123
4.9 Event logs (reports) 125
4.9.1 Preface 125
4.9.2 Buttons 127

4.9.3 Event log functions 127
4.9.3.1 New report 127
4.9.3.2 Load report 127
4.9.3.3 Delete report 127
4.9.3.4 Print report … 128
4.9.3.5 Export report … 128
4.9.3.6 Error list 129
4.9.3.7 Power fail 131
4.9.3.8 E-Mail message 132
4.9.3.9 Options (event logs) 135
4.10 Visualization 137
4.10.1 Preface 137
4.10.2 Buttons 137
4.10.3 Display the Visualization 138
4.10.4 Visualization functions 139
4.10.4.1 Configure setting 139
4.10.4.2 Save setting 141
4.10.4.3 Load setting 142
4.10.4.4 Reset setting 142
4.10.4.5 Display Test Units 142
4.11 Special menus for particular test unit types 143
4.11.1 Temperature Shock Test Cabinets 143
4.11.1.1 Overview menu 143
4.11.1.2 Pretempering 144
4.11.1.3 Program start 146
4.11.1.4 Test program creation 147
4.11.1.5 Manual and program operation 148

5 Networking 149
5.1 Serial interface (RS 232) 150
5.2 Serial interface (RS 485) 151
5.3 Network (TCP/IP) 153
5.4 Network Version (Remote PC) 154
5.5 External devices 154

6 Buttons of the CID-Pro 4.02 software 155
6.1 Status overview 155
6.2 Editor 156
6.3 Graphical measurement-data analysis 157
6.4 Event logs 158
6.5 Visualization 158

7 Software updates 159
7.1 Support section on the Internet 159
7.2 Software information 160

8 End user license agreement 161
8.1 Copyright memo 161
8.2 License agreement 161
8.3 Warranty 162
8.4 Place of fulfilment, place of jurisdiction, applicable law 162

9 Index 163
10 Technical support 167

2 Installation and system requirements

2.1 Licensing notes

The CID-Pro 4.02 can be tested free and without obligation. You can evaluate measurement files and create test programs with the demo version; communication over the serial interface is available exclusively in the full version.
If you have an Ethernet connection at the test unit, licensing would be carried out over this connection and communication would occur via the CID-Pro network version.

CID-Pro 4.02 is licensed per computer or per test unit. That means, you need a hardware key (dongle) to communicate via serial interface or an Ethernet connection to the test unit to communicate via Ethernet interface.

2.2 System requirements

- PC with 1 GHz Pentium processor or higher
- Microsoft Windows 7/8 (32 and 64 bit), Windows Vista/XP or Windows 2000 Service Pack 3 or higher
- VGA (256 colours, 1280 x 1024 pixels or higher)
- Min. 256 MB RAM, 512 MB recommended (Memory is dependent on the operating system)
- 200 MB free disk space, 1 GB recommended
- Microsoft compatible mouse
- CD ROM drive
- Free serial interface or Ethernet interface
- Free USB port for a hardware key (dongle)

2.3 Authorizations

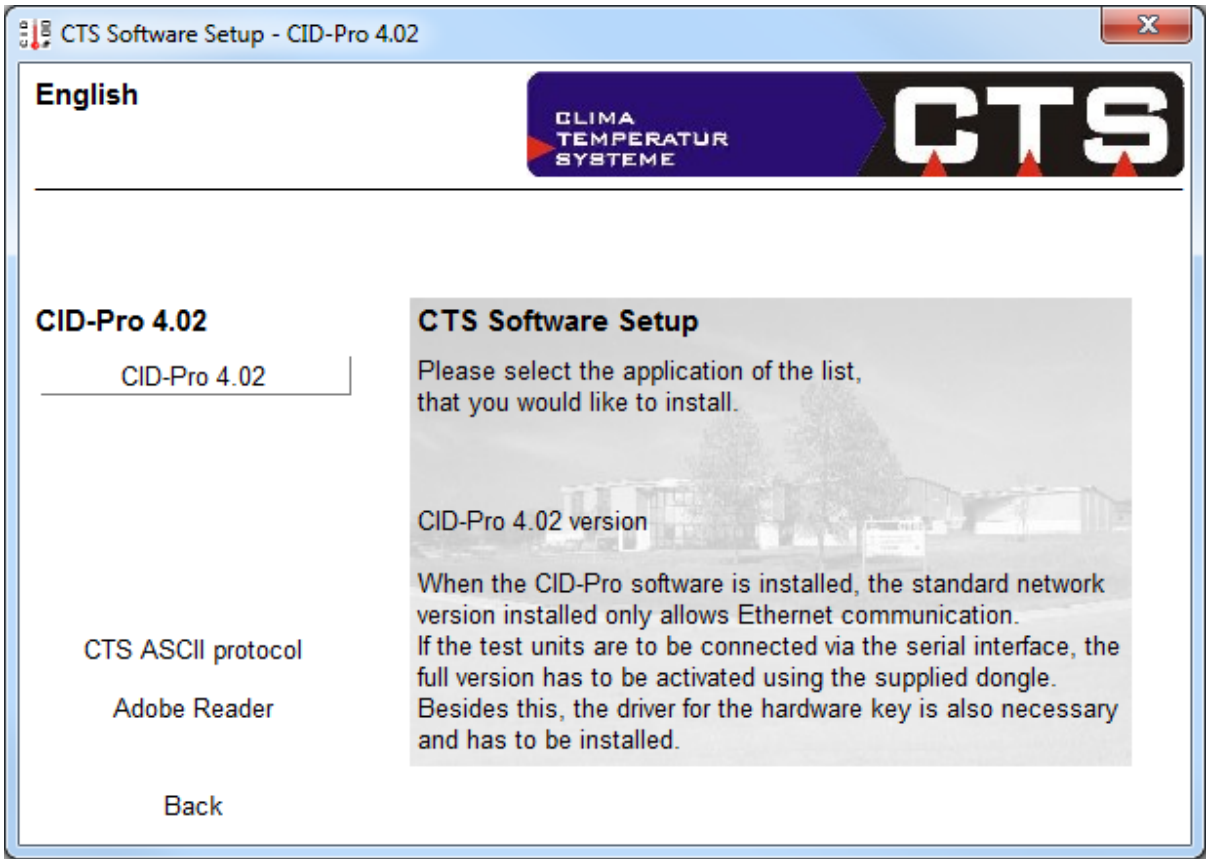
You must be a member of the local administrators' group, or have the authorization to install CID-Pro 4.02. If you are a domain administrator, then you generally have the appropriate privileges.

For modifications and updates of the various files (programs, measurement records or report files) you must have read and write access to the CID-Pro installation folder while operating the software.

2.4 Installation

It's very easy to install the **CID-Pro 4.02**-Software. Please proceed as follows:

1. Start the computer on which you want to install **CID-Pro 4.02**.
2. Log on as a user with administrative privileges.
3. It is recommended that you close all running windows programmes before starting the installation.
4. Place the CD into the drive of the computer.
5. If the **CID-Pro 4.02** installation file does not start automatically, please open it directly from your CD (e.g. d:**CD_Start.exe**).
6. Select your language.
7. In the following there are different **CID-Pro 4.02** software versions and a few tools available:


CTS Software Setup - CID-Pro 4.02
English
CLIMA
TEMPERATUR
SYSTEME
CTS
CID-Pro 4.02
CID-Pro 4.02
CTS Software Setup
Please select the application of the list,
that you would like to install.
CID-Pro 4.02 version
When the CID-Pro software is installed, the standard network version installed only allows Ethernet communication.
If the test units are to be connected via the serial interface, the full version has to be activated using the supplied dongle.
Besides this, the driver for the hardware key is also necessary and has to be installed.
CTS ASCII protocol
Adobe Reader
Back

- **CID-Pro 4.02**:

  When the **CID-Pro** software is installed, the standard network version installed only allows Ethernet communication.
  If the test units are to be connected via the serial interface, the full version has to be activated using the supplied dongle. Besides this, the driver for the hardware key is also necessary and has to be installed.
  The installation, the manual, the quick start guide and the driver for the hardware key are displayed when you click on the button 'CID-Pro 4.02'.

- **ASCII Protocol test program**
  The test program for the ASCII protocol installs an application with which you can investigate transmitted data based on this protocol. This can be helpful when you control the test unit using your own software and want to try out the necessary commands and data for this.

- **Adobe Reader**
  Acrobat Reader is needed to be able to display the documentation, also located on CD, in electronic form.

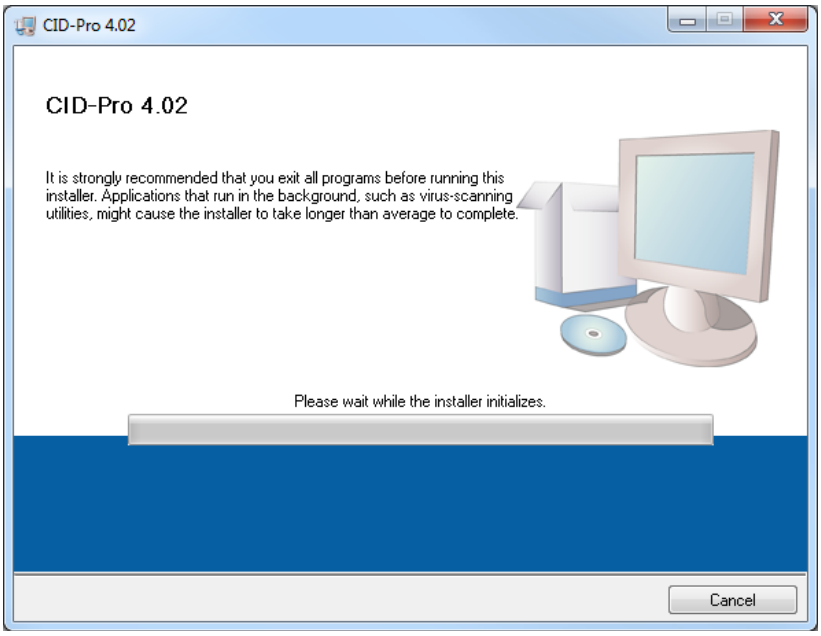
- **Quick Start Guide (PDF)**
  The Quick Start Guide describes all the important standard functions in two pages.

- **Driver for the hardware key (dongle)**
  Your computer system needs the driver in order to recognize the USB dongle.

- **Manuals**
  Manuals in the respective languages as PDF-format.

2.4.1 CID-Pro 4.02

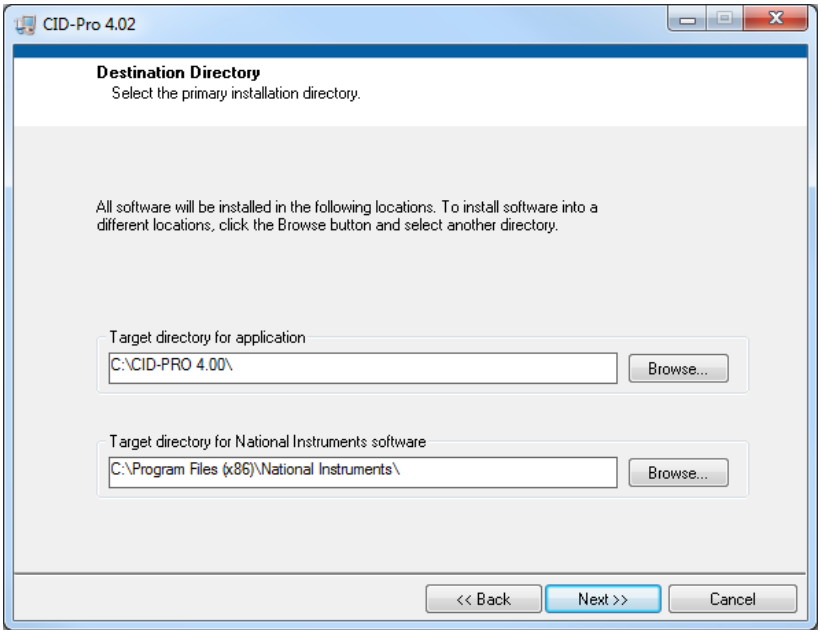
Follow the software assistant's directions after you have started the installation.


CID-Pro 4.02
CID-Pro 4.02
It is strongly recommended that you exit all programs before running this installer. Applications that run in the background, such as virus-scanning utilities, might cause the installer to take longer than average to complete.
Please wait while the installer initializes.
Cancel

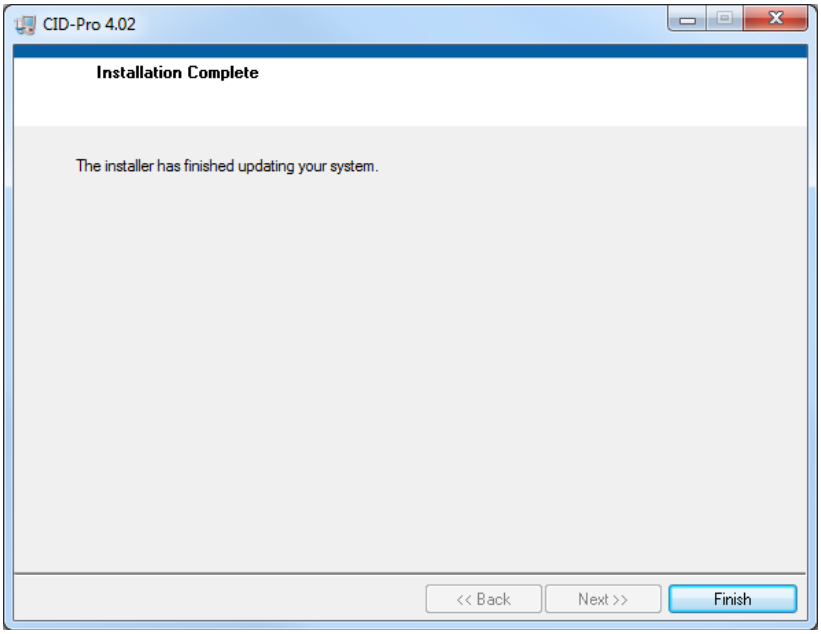
During the installation, you can select the destination directory into which **CID-Pro 4.02** software should be installed. The default is:

C:\CID-PRO 4.00

You can change this directory. It is recommended, that you install the software on the local hard drive of the computer.


CID-Pro 4.02
Destination Directory
Select the primary installation directory.
All software will be installed in the following locations. To install software into a different locations, click the Browse button and select another directory.
Target directory for application
C:\CID-PRO 4.00\
Browse...
Target directory for National Instruments software
C:\Program Files (x86)\National Instruments\
Browse...
<< Back
Next >>
Cancel

After successful installation, the following message appears:



You can now close the start up window and use the software.

Take note:

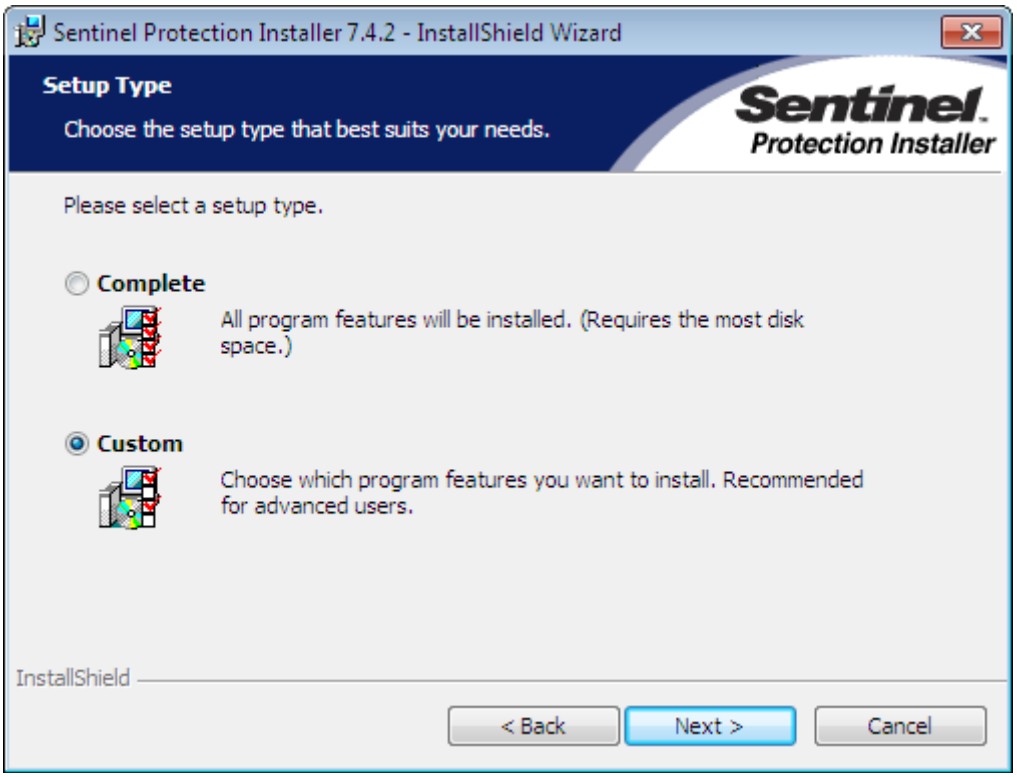
First install CID-Pro 4.02 software if you want to use the full version. Finally, start the Sentinel hardware key's (dongle) installation. Only insert the provided dongle after installing the driver on the PC.
You may be asked to connect the dongle with the PC during driver installation. In that case, follow the directions in the menu.

Check whether the USB dongle is in a USB port and the Sentinel driver is installed. Otherwise, the software is started as a network version.

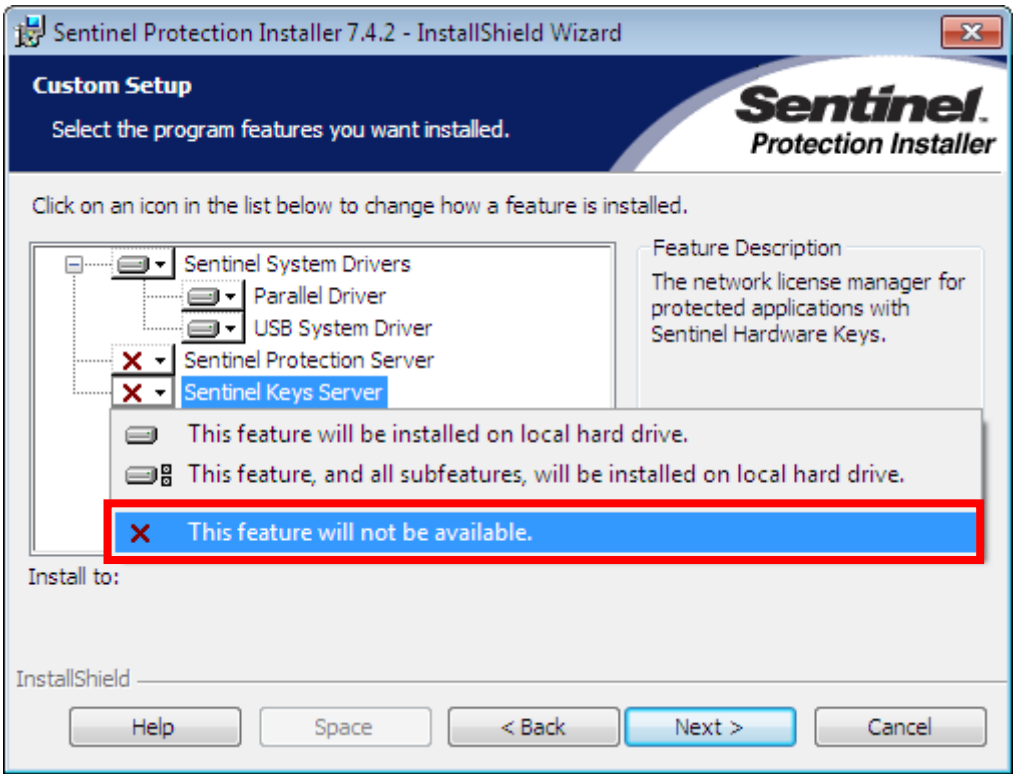
If the software version, which you have selected, is already installed, it will be updated if necessary.

2.4.2 Driver for the hardware key (dongle)

Follow the English software assistant's instructions.
Please select **Custom** during setup type selection.


Sentinel Protection Installer 7.4.2 - InstallShield Wizard
Setup Type
Choose the setup type that best suits your needs.
Sentinel
Protection Installer
Please select a setup type.
Complete
All program features will be installed. (Requires the most disk space.)
Custom
Choose which program features you want to install. Recommended for advanced users.
InstallShield
< Back
Next >
Cancel

Select only the Sentinel System Drivers (parallel and USB System Driver) and deactivate the two other entries by left clicking on the entry. Confirm with "This feature will not be available." Follow the additional instructions.


Sentinel Protection Installer 7.4.2 - InstallShield Wizard
Custom Setup
Select the program features you want installed.
Sentinel
Protection Installer
Click on an icon in the list below to change how a feature is installed.
Sentinel System Drivers
Parallel Driver
USB System Driver
Sentinel Protection Server
Sentinel Keys Server
Feature Description
The network license manager for protected applications with Sentinel Hardware Keys.
This feature will be installed on local hard drive.
This feature, and all subfeatures, will be installed on local hard drive.
This feature will not be available.
Install to:
InstallShield
Help
Space
< Back
Next >
Cancel

2.4.3 ASCII protocol test program

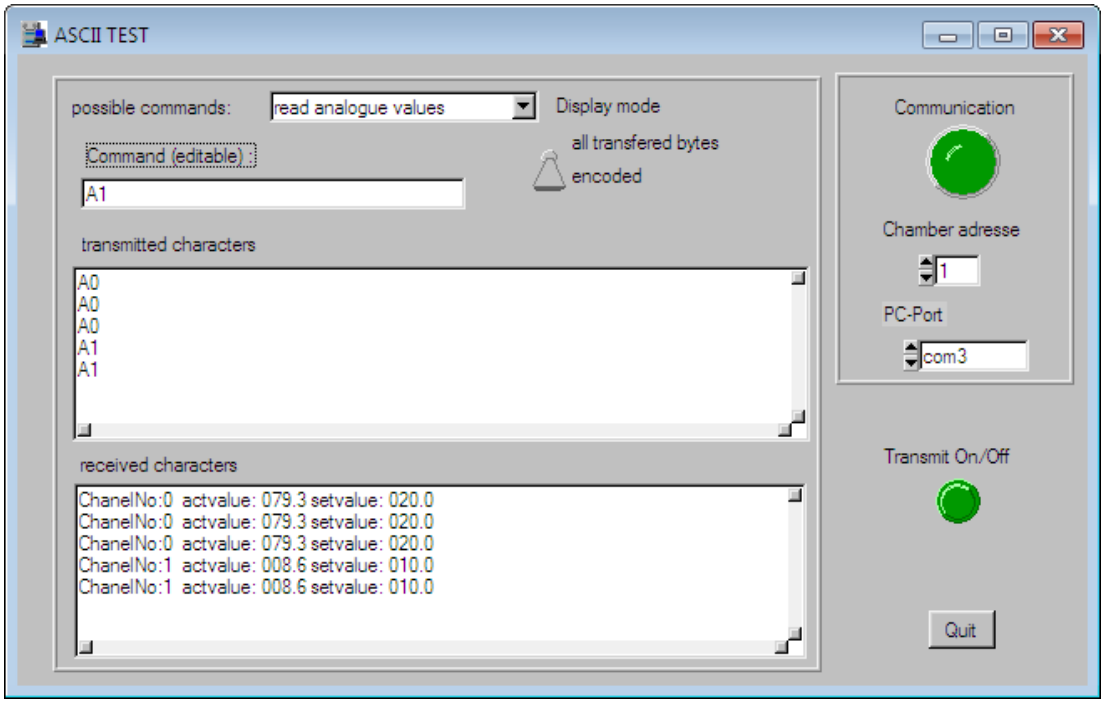
2.4.3.1 ASCII protocol for the serial interface

This test program offers you the option of checking the serial interface communication with the test unit using a couple of mouse clicks.

- Unit address: Must agree with the address set at the test unit.
- PC interface: Serial COM port, which is connected with the test unit.

- Communication: red - no communication
  green - communication OK
- Left area: Status selection, sent and received character.

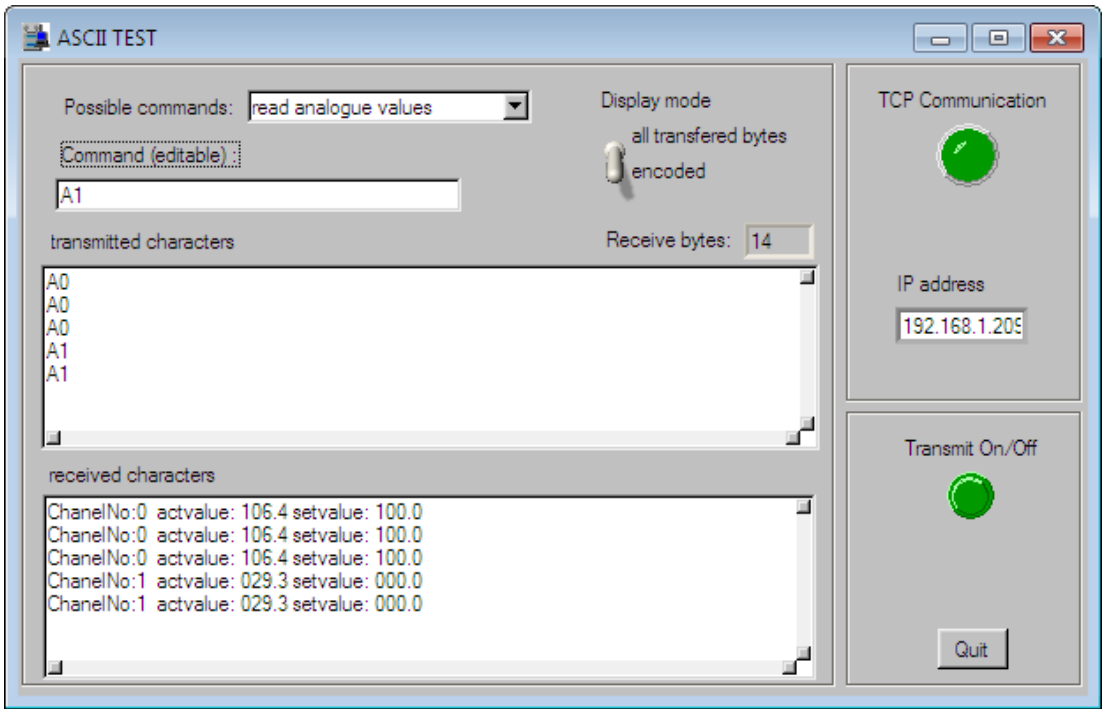
- Possible commands: Selection of all commands which can be sent to the equipment
- Display mode: Display of characters in plain text (see figure) or in actual transmitted bytes



2.4.3.2 ASCII protocol for the Ethernet interface

This test program offers you the option of checking the Ethernet interface communication with the test unit using a couple of mouse clicks.

- IP address: Must agree with the IP address set at the test unit.
- TCP Communication: red - no communication
  green - communication OK
- left area: Status selection, sent and received character.
- Possible commands: Selection of all commands which can be sent to the equipment
- Display mode: Display of characters in plain text (see figure) or in actual transmitted bytes



Please note: Please adjust the **IP port: 1080** to the test unit!

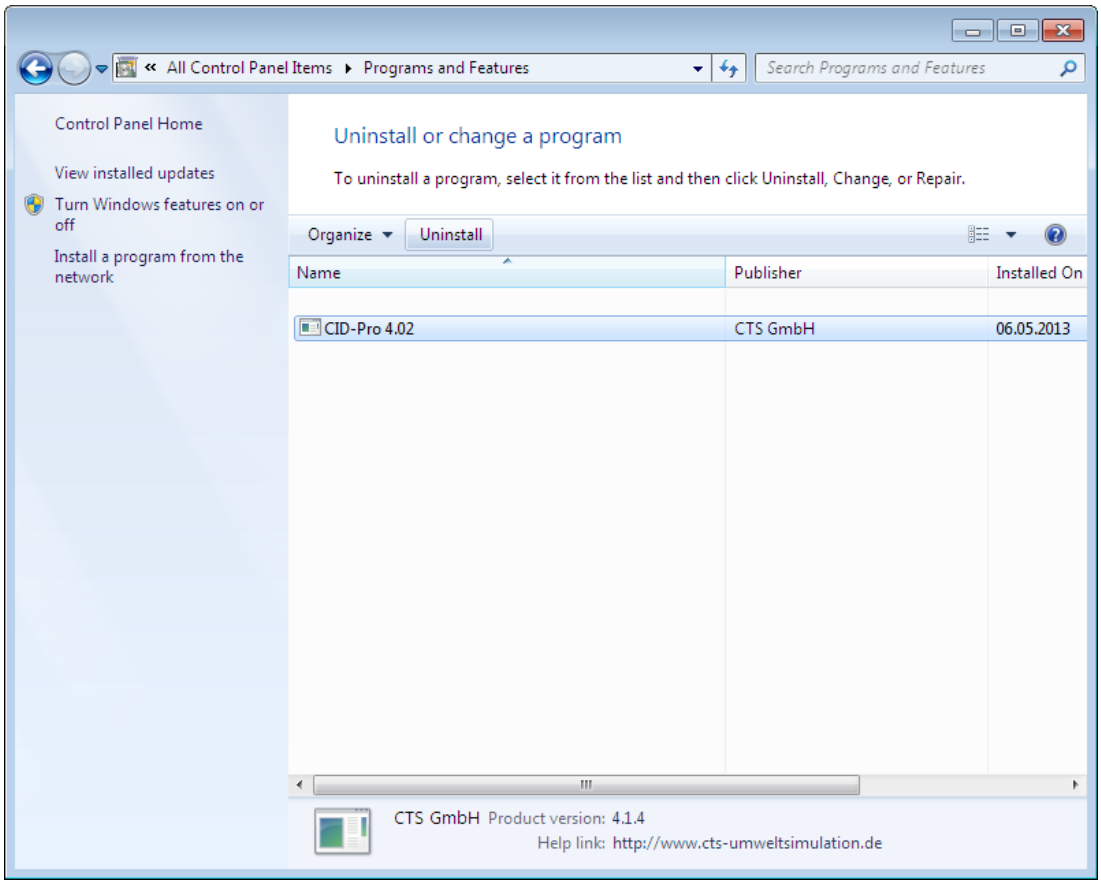
2.4.4 Manuals and Adobe Acrobat Reader

The software's PDF manuals are displayed if you have access to Adobe Acrobat Reader. Click the reader's desired language and follow the installation instructions if you have not yet installed the reader.

2.5 Uninstall

To remove **CID-Pro 4.02** from your system, open **Control Panel** from the start menu's **Settings** and select **Software** resp. **Programs and Features**.

Please select **CID-Pro 4.02** from the installed software list and click on the **Remove** resp. **Uninstall** button.



Confirm uninstall of **CID-Pro 4.02**.
CID-Pro 4.02 is now removed from your system.

All files installed while working with **CID-Pro 4.02** like programs, measurements, report files, initialization files, as well as personal settings remains during uninstall. They can be re-used during re-installation into the same installation directory.
If you don't need any of them you can delete all files in the **CID-Pro 4.02** directory after uninstall.

3 Program start-up

3.1 Software

Click on:

Start ➔ (All) Programs ➔ CID-PRO 4.00 ➔ CID-Pro 4.02

or

on a short cut „CID-PRO 4.02“ on the desktop

During **FIRST** program start-up, you directly find yourself in the software's program settings (cf. section 4.2 - Configuration (CID-Pro 4.02 - Settings), page 35).

Before you can work with the program you have to define how many test units there are, how the test units are connected to the software and at what interval they are to be queried.

At all subsequent program starts the software independently searches for test units on the basis of these settings and, if the test units are switched on, retrieves the current unit data.
If the test unit configuration is not available, it is read in by the CID-Pro software. If no communication can be established, the test unit cannot be integrated.

You now find yourself in the status overview (cf. section 4.1 - Status overview, page 19).

3.2 Units

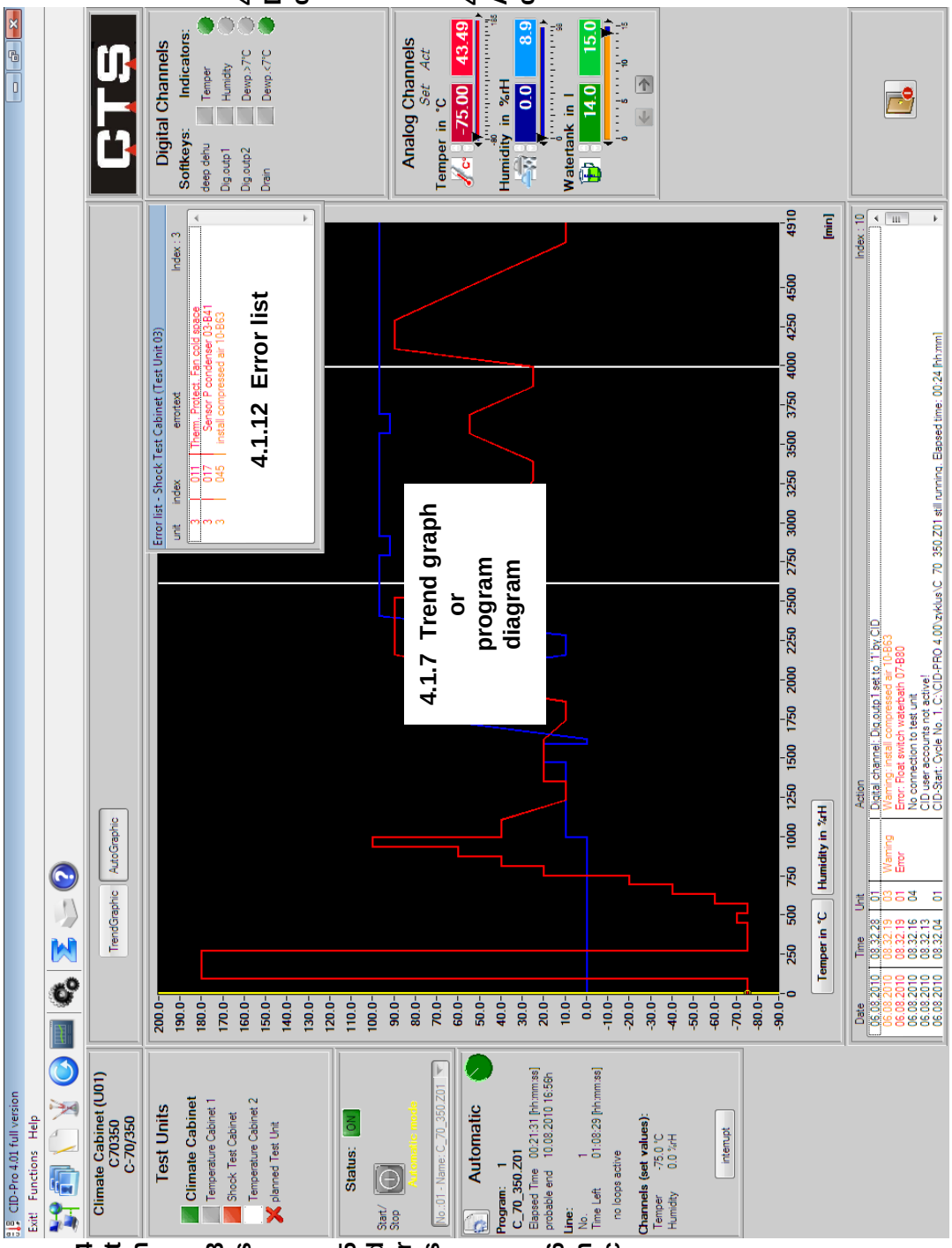
Check the set protocol and the unit address directly at the test unit if you get no connection to your test unit.

Network parameters like IP address, IP port, subnet mask, and default gateway must be set correctly during communication via network. You usually get these data from your network administrator.
You find out how parameters must be entered at the test unit in your test unit's operation manual.

4 Program parts and functions

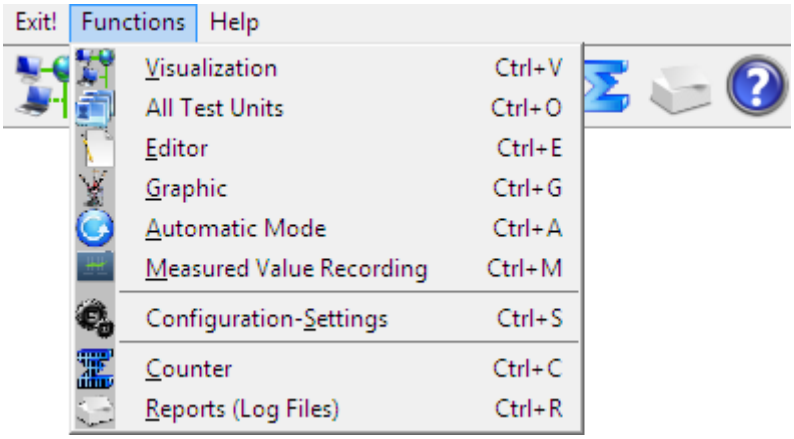
4.1 Status overview

4.1.1 Preface



4.1.2 Symbol and menu bar

Main symbol and menu bar functions are listed in the following:

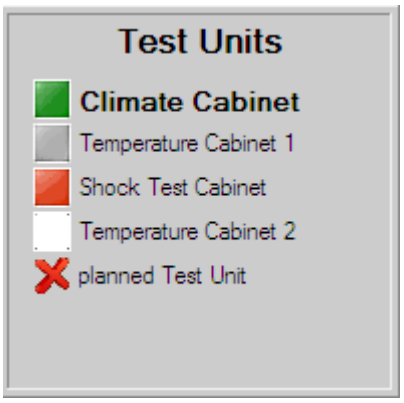


	Exit		Exit!
	Visualization (section 4.10, page 137) Display your test units in a self-generated environment.	**Ctrl+V**	Functions
	Overview of all test units (section 4.3, page 55) Display all your connected test units in a overview.	**Ctrl+O**	Functions
	Test-cycle program editor (section 4.4, page 57) Create, edit, change, and delete your test-cycle programs.	**Ctrl+E**	Functions
	Graphical measurement-data analysis (section 4.5, page 91) Display your test data in a diagram and analyze them.	**Ctrl+G**	Functions
	Starting test programs (automatic) (section 4.6, page 111) Start a test-cycle program from CID-Pro 4.02 in automatic mode.	**Ctrl+A**	Functions
	Manual measurement recording (section 4.7, page 117) Document the progress of analogous and digital channels' test units with test value records.	**Ctrl+M**	Functions
	Configuration (CID-Pro 4.02 - Settings) (section 4.2, page 35) Configure your software according your requirements.	**Ctrl+S**	Functions
	Operating hours and event counter (section 4.8, page 123) Display your operating hours and events.	**Ctrl+C**	Functions
	Event logs (reports) (section 4.9, page 125) All changes, warnings, and errors can be displayed and provided with comments.	**Ctrl+R**	Functions
	Help	**F1**	Help
	Info **Software information** (section 7.2, page 160)	**Ctrl+I**	Information

4.1.3 Test Units

The symbols give an overview of the current status of all test units set in the configuration. See list below for a description of the colours:

Symbol	*Colour*	*Configuration*	*Test Unit*
	red X	**not configured**	**not present**
	white	**configured**	**Doesn't answer** Main switch off or No connection
	grey	**configured**	**connected** not started
	green	**configured**	**connected** in operation
	orange	**configured**	**connected** in operation **Pause**
	yellow	**configured**	**connected** warning
	red	**configured**	**connected** error

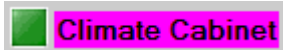


Clicking on a symbol changes the status-overview screen to display the selected test unit and show the current values.

The selected test unit respective the current test unit which is displayed is bolded in the list of all test units.

If you have entered more then 16 test units in the configuration you will get the two paging symbols (🡐 and 🡒).

With version 4 of the CID-Pro software, entered test units can be assigned names. This unit name can be freely entered into the configuration and changed (cf. sec. 4.2.2 - Configuration: Communication, page 36). If no name is recorded, the default designation "**Test Unit xx**" is displayed. ***xx*** stands in this case for the unit number.

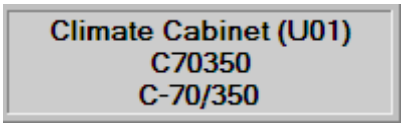
If an active measurement recording, such as 

has been started, this measurement record can immediately be opened by left-double-clicking on the symbol for the test unit.

4.1.4 Unit information

In this area, you can read off the unit's information for the selected and displayed test unit. You can see the following information:

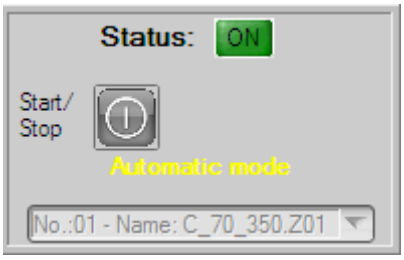
Field	*Significance*	*Example*
Name	**Unit name + default designation** In the configuration modifiable value (cf. sec. 4.2.2, page 36)	**Climate Cabinet (U01)**
Commission number	**Unit commission** Constant value read from the test unit control	**C70350**
Unit type	**Unit device type** Constant value read from the unit control	**C-70/350**



Information in this area is not changeable; it is only for display!

4.1.5 Unit and error status

Test units status shows operational and error status.



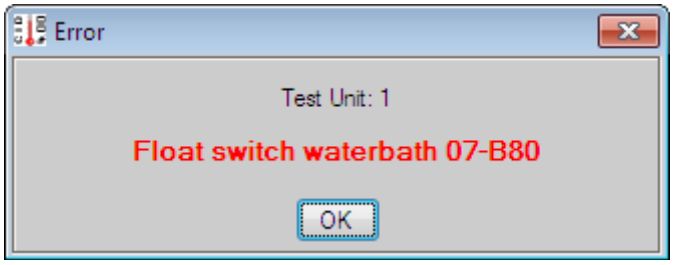
Operational status:

Symbol	*Status*	*On clicking*
	unit is running (ON)	**Unit will be stopped after confirmation.**
	unit off (OFF)	**Unit will be started.**

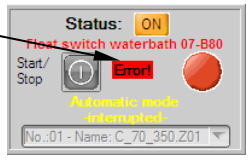
Error status:

Symbol	*Status*	*On clicking*
	OK	**-**
	Warning	**---** A warning cannot be acknowledged because the status is displayed for as long as the warning exists.
	ERROR!	**Attempt to acknowledge the error.** **Only operates when the cause of the error was removed!!!**

If there is an **error** at a unit, the error is displayed with the number of the test unit.
At the same time, the unit is stopped and unit status is set to error, shown in red.
Click on the button OK to close the error window.



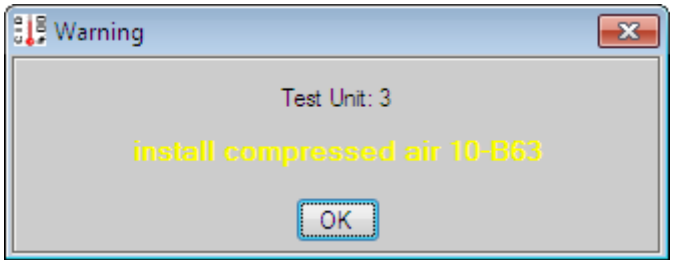
By clicking on the error button, the error will be removed if it is no longer present.
If the button is no longer shown, the error is no longer present and the unit continues to run error free. On the other hand, if the button stays visible and red, then the error is still present.
This unit's button stays red until **all** errors have been removed and acknowledged.

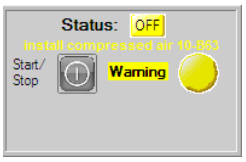


Take note: **Before acknowledging the error, its cause must necessarily be checked out and removed.**

In this example the unit only continues to operate if the Float switch waterbath error is removed. It serves no purpose to acknowledge the error message if the error has not been removed. The system can only operate again after the error has been removed and acknowledged.

If there is a **warning** at a unit, the warning is displayed with the number of the test unit.
At the same time, the unit status is set to warning, shown in yellow.
Click on the button OK to close the warning window.





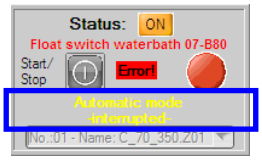
Take note: **When the cause of the warning has been removed, the warning will generally be cancelled automatically.**

Yellow signal: Text output about automatic operation status

Automatic mode

Automatic mode
-Interrupted-

Programmed start time:
14:30 08.08.2010



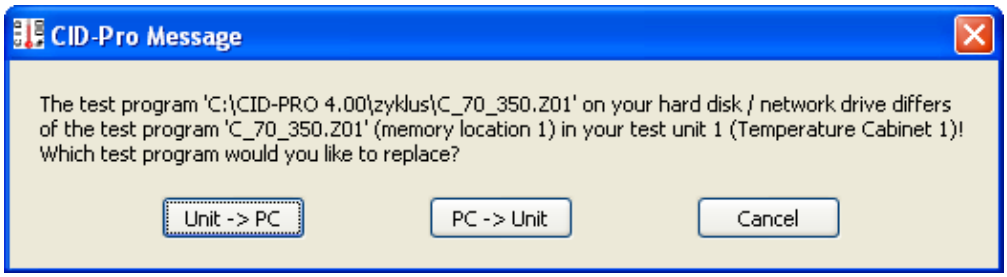
Selection field (Manual-Mode)**:** automatic quick-start selection

If the unit is stopped, i.e. it is not running right now, clicking on the selection field opens a list of all programs that are stored in this unit's controller.
During selection of a program and activation of the start button, this program is started in automatic mode without going through the "automatic" menu.

Normally, a created test program is loaded to the selected unit controller and started if necessary via the "Automatic" menu.

If you now want to carry out changes to this program, whether in the **CID-PRO 4.02** editor on the PC or in the unit editor, the PC program and the controller programs with the same name will no longer match.
When the quick start selection is carried out, both programs (PC and unit programs) will be completely evaluated and compared:

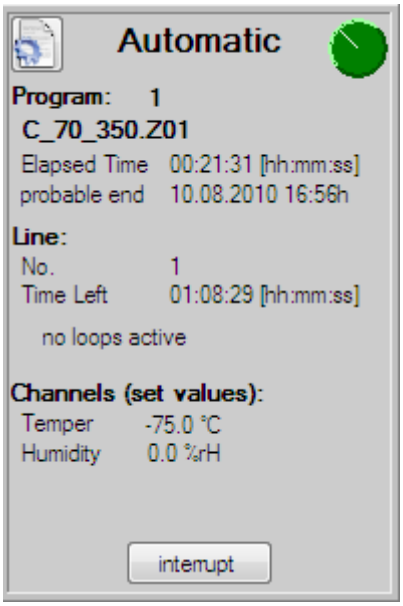
1. **Programs the same** ➔ Unit program is started
2. **Programs different** ➔ User will be asked which program is newer and therefore which should be overwritten.


CID-Pro Message
The test program 'C:\CID-PRO 4.00\zyklus\C_70_350.Z01' on your hard disk / network drive differs of the test program 'C_70_350.Z01' (memory location 1) in your test unit 1 (Temperature Cabinet 1)!
Which test program would you like to replace?
Unit -> PC
PC -> Unit
Cancel

- **Unit ➔ PC:** Unit program overwrites PC program. ➔ Unit starts
- **PC ➔ Unit:** PC program sent again to unit ➔ Unit starts
- **Cancel:** Cancel to check which program is more up-to-date.

4.1.6 Program automatic

The display of the program automatic is changed while the CID-Pro 4.02 software is running. Program information is shown depending on which test unit you have chosen and which operational state the test units have. This includes:



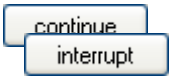
Program information:

Program (no.):	Program number in the controller
Program name:	Program name in the controller
Elapsed Time:	Time elapsed since starting Format: [hh:mm:ss] (hours:minutes:seconds)
Probable End:	Time calculated to program completion

Take note: If you start a test program with a wait function, i.e. that a channel's nominal value waits for the actual value (within a particular tolerance), then the end of the program cannot be exactly calculated.
The time is calculated without wait functions and is constantly updated based on the number of wait functions and their actual durations.

Line information:

(Line) No:	The line number on which the program currently finds itself.
Time Left: (the line)	Execution time remaining on this line
Active loops:	Are loops still active? Number and completed repetitions are shown for active loops.
Set values of Individual channels:	The set values of the first four analogue channels of the current line are displayed.



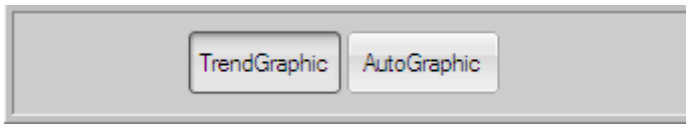
Button to interrupt or continue the test program.
The test unit is set to **interrupt** status (display “continue”) if an error exists. Now the program can only be restarted after the error is fixed.

If you have saved comments during creation of the test-cycle program, these are displayed with this button. The comments are only for display and cannot be changed.

The rotating disk in the upper right hand corner shows whether automatic operation is running. If the disk is grey, the test program is interrupted (e.g. because of a pause or an error). If it is rotating and green, then the program is running.

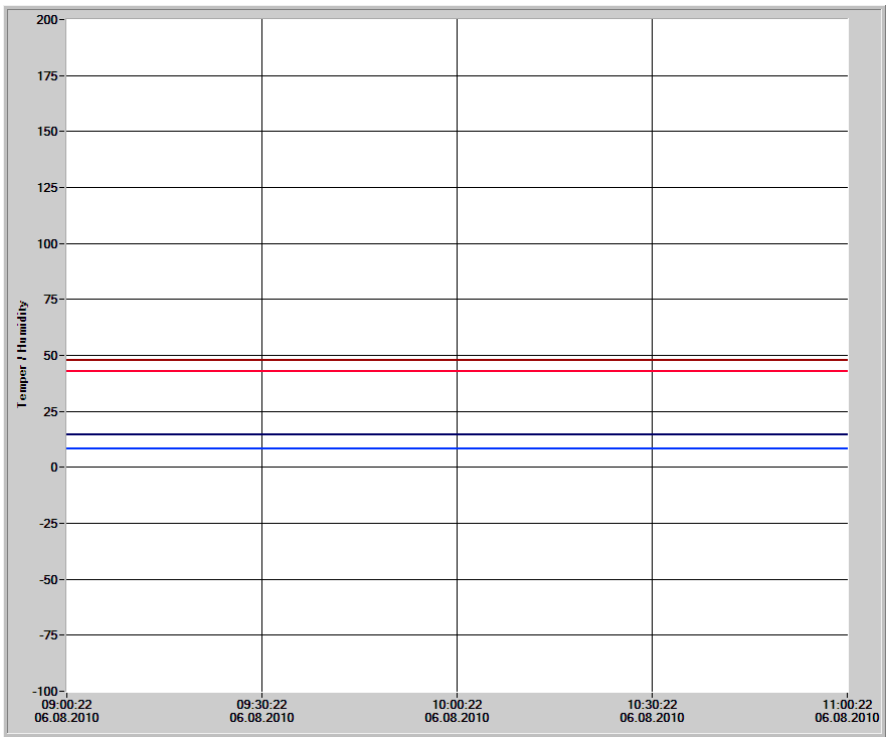
4.1.7 Trend graph

In the screen's top centre area, a symbol bar offers selection options between different displays. Not all of these buttons are visible under some circumstances. This depends on the unit's type and operational state.



If the trend graphic button

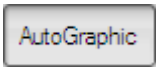
is activated, the status overview window will show the trend graph. This graph shows the temperature profile (and the humidity profile when present) with set and actual values respectively.



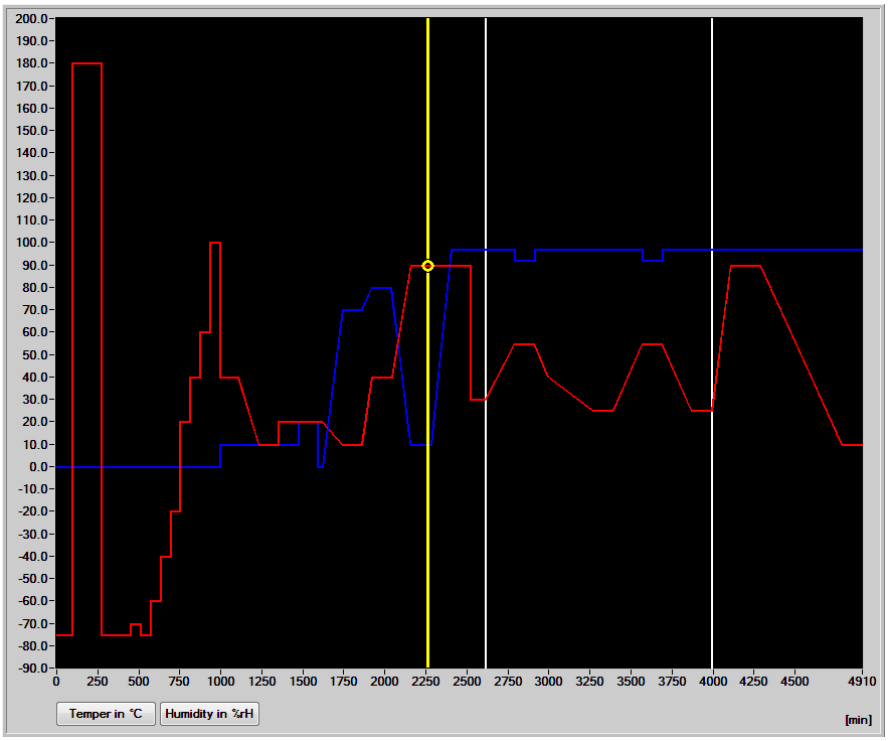
The trend graph always shows a constant time window up to the current instant. The special configuration of this time windows is illustrated in more detail in sec. 4.2.2 - Configuration: Communication, page 36. This scale applies for both channels (temperature and humidity as needed).
The channels' colours are assigned as follows:

Temperature -	actual value	light red
Temperature -	set value	dark red
Humidity -	actual value	light blue
Humidity -	set value	dark blue

Take note: Trend graph data are only stored temporarily. You **cannot** replace a measurement record!

If the automatic button 

is activated or a test-cycle program is running in the current unit, the automatic display will be activated. The automatic display gives you detailed information about the current test program. This is displayed graphically (see next figure) as well as in program-automatic screen form (cf. sec. 4.1.6 - Program automatic, page 26).



The yellow bar shows the current position in the test program. It moves through the program following the temperature index value. If there are loops in the program they are symbolised as white vertical lines. Reaching the end of a loop the yellow bar jumps back to the beginning.

Scaling of the Y axis (Y min and Y max) is determined by the smallest and largest Y values of all the analogue channels depicted. Y min and Y max are rounded down resp. up and adapted with ±10.
The push buttons for temper and (if necessary) humidity or up to three other analogue channels change the scaling to the range of the selected channel.

4.1.8 Messages (change, warning, and error messages)

This short, six line excerpt from the Event logs (reports) give you a short overview of the latest messages, which are shown **independent from the unit**. Furthermore, the red errors display and the orange warnings display are often very helpful.

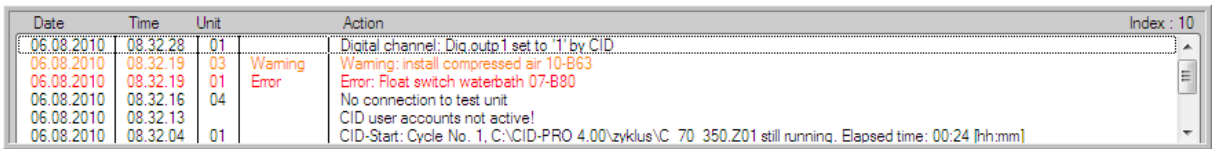
The messages are:

- All **changes** of the **system**:
  - Software changes like CID-PRO start
  - Configuration changes like changed number of units

- All **changes** of the **unit**:
  - Changes to the unit's operation like e.g. manually starting the unit
  - Changes to digital or analogue channels like e.g. changed temperature
  - Connection messages like e.g. no connection to test unit 5

- All **errors** of the **unit** (**red** entry)

- All **warnings** of the **unit** (**orange** entry)



Date	Time	Unit		Action	Index : 10
06.08.2010	08.32.28	01		Digital channel: Dig.outp.1 set to '1' by CID	
06.08.2010	08.32.19	03	Warning	Warning: install compressed air 10-B63	
06.08.2010	08.32.19	01	Error	Error: Float switch waterbath 07-B80	
06.08.2010	08.32.16	04		No connection to test unit	
06.08.2010	08.32.13			CID user accounts not active!	
06.08.2010	08.32.04	01		CID-Start: Cycle No. 1, C:\CID-PRO 4.00\zyklus\C_70_350.Z01 still running. Elapsed time: 00:24 [hh:mm]	

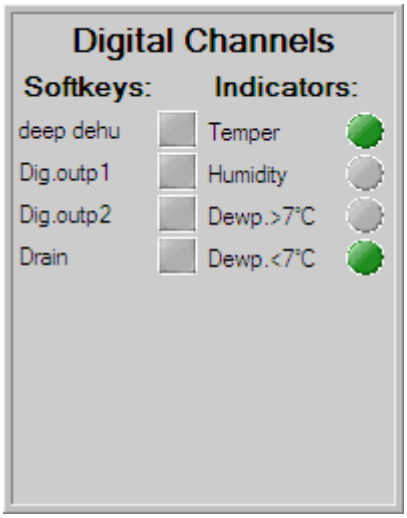
The columns have the following meaning:

- Date: Date on which the message was created
- Time: Time at which the message was created
- Unit: Unit number information, if a unit-specific message is involved
- *(empty):* Information, whether warning or error
- Action: Message

- Index: Number of messages in the list

4.1.9 Digital channels

The display of the digital channel relates to the currently displayed test unit. Softkeys and marker channels are displayed dynamically depending on unit configuration - like how many channels this unit possesses. Only the digital channels actually present in the controller and activated for viewing are shown on the display.



The two kinds of digital channels are:

Softkeys:

These digital channels are switching channels that execute permanently defined functions or actions.
Softkeys are displayed and can be changed programmatically or manually. The Softkey is set (1) or reset (0) during program operation in the provided program. (For manual operation, see Changing a Softkey (next section))

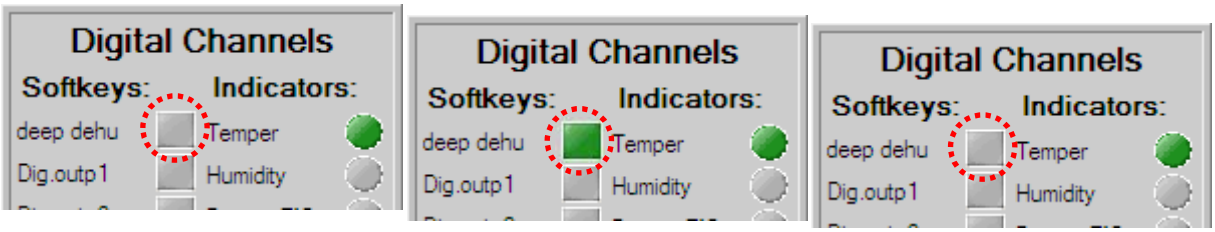
Indicators:

These digital channels present digital inputs or functions, whose current state can be displayed, but **cannot** be changed.

Changing a Softkey:
In manual operation, the Softkey is set by directly clicking on the grey square (not active). If the active test unit could confirm the new state, the grey button changes its colour to green. Click on the green square if you would like to reset this channel. The green button returns to grey after unit confirmation.

e.g. the "deep dehu" (deep dehumidification) Softkey

Click on the channel
OFF (=0) ➔ ON (=1) Click on the channel ➔ OFF (=0)

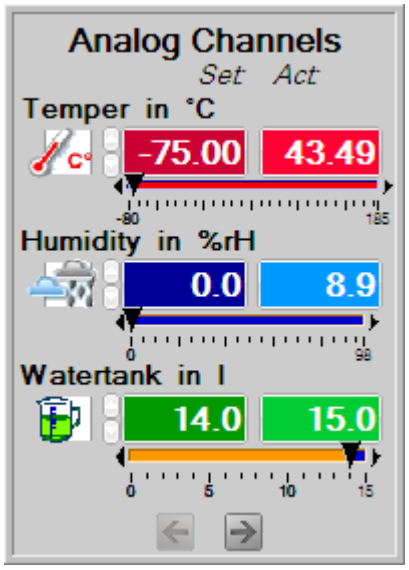


Take note: **The states are only changed when the active test unit confirms this change!**

If your unit configuration contains more than eight Softkeys or marker channels, the digital channel screen adds two paging symbols (🡐 and ➔), which enable back and forth paging of the digital channels.

4.1.10 Analogues channels

The display of the analogues channel relates to the currently displayed test unit. Channels are displayed dynamically depending on unit configuration - like how many analogue channels this unit possesses. Only the analogue channels actually present in the controller and activated for viewing are shown on the display.



The various analogue channels are represented as follows:

Representation	*Symbol*	*Channel*	*Unit*
red		Temperature channels	°C
blue		Humidity channels	%rH
green		Channels with water information	l (liter)
green	-	Other channels	*arbitrary*

The actual analogue values on the right are represented with weaker colour intensity than the set analogue values. In contrast to the actual values in manual operation, these can be arbitrarily changed. In program operation, such a change is not possible, because the program permanently presets the values.

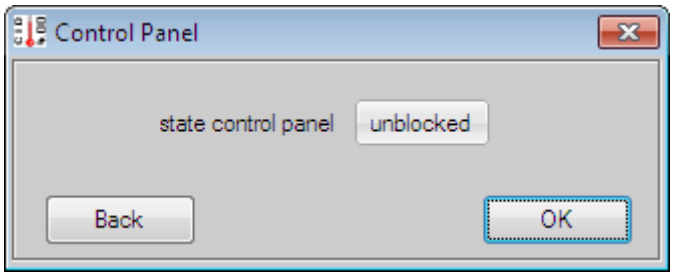
Changing a set value:
There are two options for entering a set value:
In one, the set value can be changed by sliding the arrow symbol located directly under the set and actual values. To do this, left click on the arrow symbol and keep the mouse button depressed. Now you can move the mouse to change the value.
The second option is to click on the set value in the display field, thereby activating it (numerical colour changes). Now you can enter the value through the keyboard. Note that a point must be used as the decimal delimiter. The entry is confirmed with the enter key.

If you released the mouse button in the first option, or confirmed with the enter key in the second option, the test unit receives this new set value.

If your test unit configuration contains more than three analogue channels, the analogue channels screen adds two paging symbols (🡐 and 🡒), which enable back and forth paging of the analogue channels.

4.1.11 Disable control terminal

Clicking the key icon opens a window showing whether the active test unit's control terminal is enabled or disabled.



You can change the state with a mouse click on the desired switch position. The new setting is transmitted to the unit with the OK button. All key presses at this unit's control terminal are ignored if the keyboard is disabled.

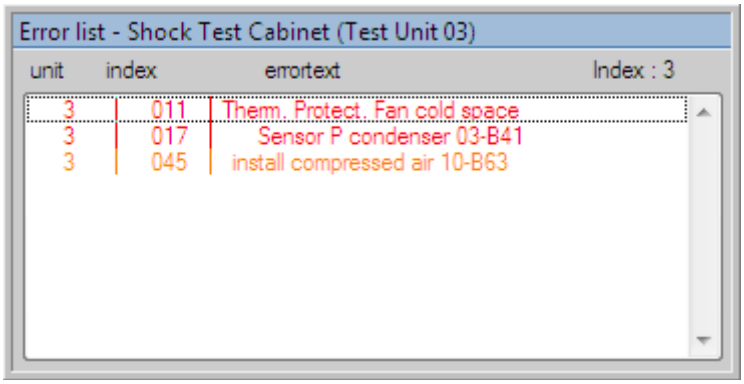
Take note: The key switch will only be displayed if the "Enable locking terminal" option is set in the configuration (cf. sec. 4.2.5 - Configuration: Generally - Options - Enable locking terminal, page 44).

A power outage or toggling the unit's main ON/OFF switch unlocks the keyboard.

If the connected test unit's software version does not allow keyboard locking, this unit's "key icon" is not visible.

4.1.12 Error list

The Unit and error status (cf. sec. 4.1.5, page 23) displays the existing error/warning. From this view it is not clear if other errors/warnings exist.
The **error list** will **display all existing errors and warnings** of the test unit currently selected.


Error list - Shock Test Cabinet (Test Unit 03)
unit
index
errortext
Index : 3
3 011 Therm. Protect. Fan cold space
3 017 Sensor P condenser 03-B41
3 045 install compressed air 10-B63

Characteristics of the error list:

- The error list will only be displayed where an error / a warning exists. If the test unit operates with no errors/warnings, the error list is masked.
- By default, the error list is displayed in the event of an error / a warning. If it should not be generally displayed, the "Show error list" option must be deactivated in the configuration (cf. sec. 4.2.5 - Configuration: Generally - Options - Show error list, page 44).
- The error list will be updated regularly.
- Unlike the error list from the Event logs (reports), these entries cannot be acknowledged, but only provide an overview of the current errors/warnings.

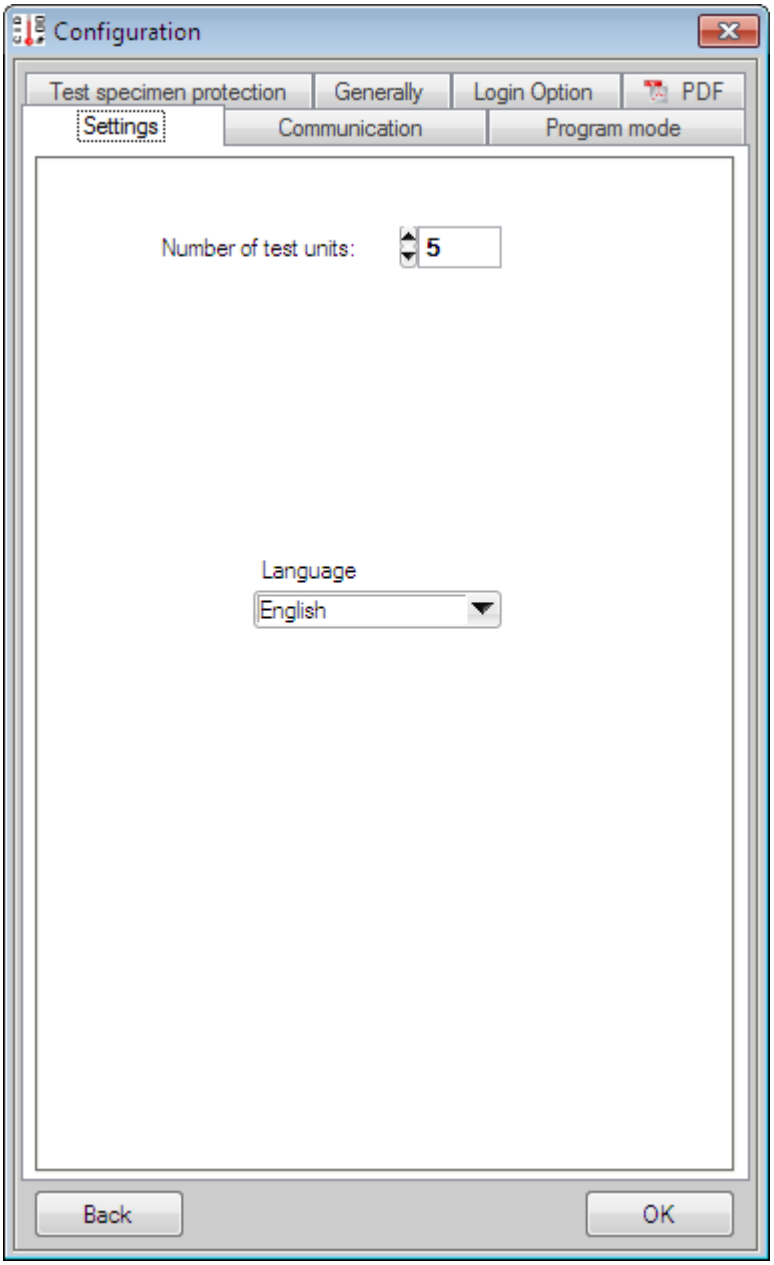
4.2 Configuration (CID-Pro 4.02 - Settings)

Basic **CID-Pro 4.02** settings can be selected in the configuration menu.

4.2.1 Settings

With the **Number of test units**, you set how many test units you have connected and **CID-Pro 4.02** should administer.
This number is the maximum number of units that you can deal with in the communications settings.

The **Language** sets all **CID-Pro 4.02** texts and messages to the selected language at run time.



4.2.2 Communication

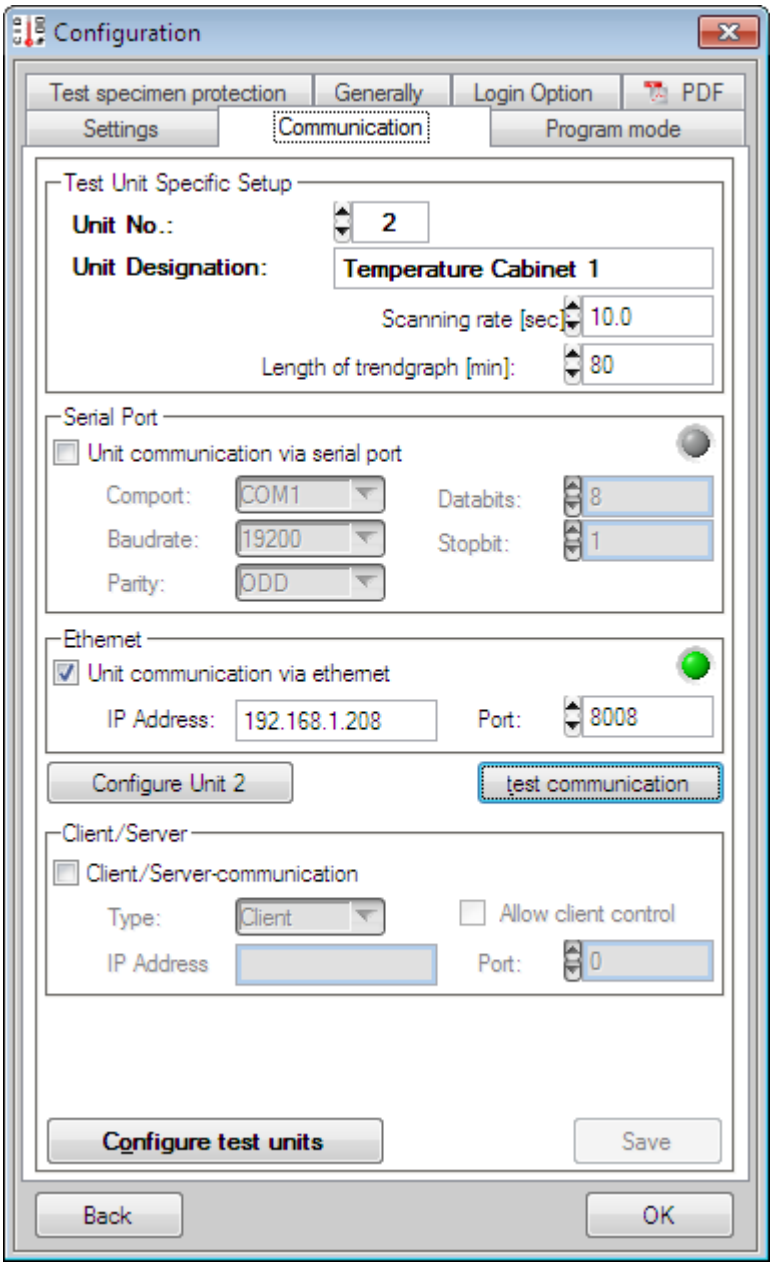
In the **Test Unit Specific Setting**, you first select the **Unit No** that you would like to edit. In this connection, only unit numbers from 1 to the number chosen in the settings (cf. sec. 4.2.1 - Configuration: Settings, page 35) can be selected.

All further settings in the communications parameters always apply only for this selected unit.

The following parameters can be set for the selected unit:

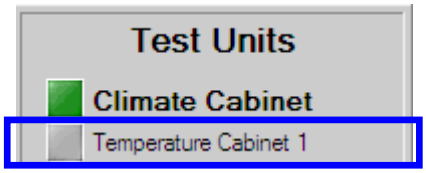
- **Unit designation**
- **Scanning rate**
- **Length of trendgraph**
- **Serial Port / Ethernet**
- **Client/Server Setting**

- **test communication**
- **Configure Unit x**
- **Configure all Test Units**



Unit designation:

The unit designation is a freely editable, characteristic designation for the selected test unit. Enter a name, location, or something else here.



Scanning rate:

The scanning rate in seconds is the interval during which the selected unit is cyclically scanned. Too small a value leads to unnecessary data traffic. Too large a value leads to unpleasantly long CID-Pro 4.02 reaction times. Ten seconds is a good value in most cases.

The sampling rate is the smallest interval valid for recording measurement-data. measurement value recording always occurs in multiples of the sampling rate.

Length of trendgraph:

Change the trend graph's time axis length in the status overview. The information is given in minutes. Reasonable values lie between 60 and 120 min. and can be modified depending on the test unit's task.

Serial interface / Ethernet:

By selecting the appropriate selection box, either parameters for the serial interface or for the Ethernet-TCP/IP become active.

Serial interface:

The serial interface denotes a digital input and output for a computer or a peripheral device. During serial data transmission, bits are transmitted one after another along a single conductor. The following parameters must be set for the serial port:

			Default values:
-	**COM port:**	PC interface	**1**
-	**Baud rate:**	unit of transmission speed	**19200 Baud**
-	**Parity:**	erroneous information transmission detection	**odd parity**
-	**Data bits:**	transmission occurs in words (word ➔ 5 to 9 bits)	**8 data bits**
-	**Stop bits:**	up to two stop bits are used because of synchronization	**1 stop bit**

Ethernet:

Ethernet is a wired data network technology for local data networks (LANs - Local Area Networks). They enable data exchange in the form of data frames between all devices connected to a local network (computer, printer, CTS units and the like).
Assigned addresses must be **unique**. In other words, a selected IP address may not be assigned a second time within this network.
The desired unit's IP address, as well as an unused IP port number, are necessary for communication over Ethernet.
(Entry at the unit via: **Mainmenue 2/3 ➔ Settings ➔ Network**).

Take note: Your network administrator assigns IP addresses (as well as subnet mask and default gateway) within your network.

-	**IP address:**	unique unit address	**192.168.1.90**
-	**IP port:**	port number in the suggested range **8000 to 8050**	**8001**

Please note: Sensible numbering:
IP port 8001 for unit 1, IP port 8002 for unit 2, etc.

Client/Server Setting:

With client/server communication, you can query the unit's values from other PCs via the computer connected to the unit. The PC that communicates with the test unit is set up as the **server**. The other PCs, which access its data, are **clients**.
The server's IP address and a port number common to client and server (recommended range is **2000 to 2050**) must be set up on the clients.
It can be furthermore specified on the server whether the connected clients may change values in the unit.

Take note: It makes sense to install the **CID-Pro 4.02** network version, otherwise a dongle will be needed.

Server setup example:

- **Type:**	type determination	**server**
- **IP address:**	PC address e.g. 192.168.1.100	**---**
- **Port:**	common port number	**2010**
- **Allow client control:**		☑

Client setup example:

- **Type:**	type determination	**client**
- **IP address:**	server IP address	**192.168.1.100**
- **Port:**	**common port number**	**2010**

A further path adaptation for storing individual files makes sense for optimal use of the networking. It is recommended that directories be set up on a file server to which the participating PCs have access. These directories can be designated in the following way:

Configuration files:	**\\CID_Netz\konfig**
Measurement files:	**\\CID_Netz\messung**
Test programs:	**\\CID_Netz\zyklus**

After the network administrator has set up these directories on the network, directory paths must be changed in the configuration (cf. sec. 4.2.5 - Configuration: Generally, page 44) of all participating PCs.
With access to the config files on the network, it is ensured that all PCs will have the same unit's settings. The correct server config file (e.g. KONFIG.K01) in the **CID-Pro 4.02** installation directory must be copied to the client if no network directory is specified.
Without a config file, the software cannot display the unit's setting. The unit is then considered to be not connected, although communication functions in practice.
This way, the client now also has access to already completed measurement records. Besides, test programs can be provided on all PCs. If a test program is already running on a unit, the graphical program preview can also be activated on the client.

Selecting **ASCII-Server** enables a scan of current values on the selected test unit with in-house software. You can get the data records description for this special application from the CTS hotline.

Test communication:

To ensure that the displayed communications parameters for the selected test unit were correctly entered, the connection is checked with exactly these parameters.
If a connection can be established, the affected LED illuminates **green**, if not, it stays **grey**.

Configure Unit x:

A unit's configuration contains all the information displayed in the CID-Pro 4.02 software. This includes analogue and digital channels (e.g. number, type, name, boundary values,...), meters (e.g. name, limits, …), operating hours, regulators, etc.
This configuration **must** be read in when you:

- want to integrate a new test unit,
- want to replace a test unit, or
- for example, want to assign a new address to a test unit.

This applies in general:

- when system settings change at the test unit (e.g. enhancement of a new sensor) or
- when system settings change in the software (e.g. other units numbers)

With the **Configure Unit x** function, you can re-read in the configuration for unit 1, for example. The **x** stands for the unit number, depending on which unit is selected. After activating the function and the subsequent confirmation prompt, the selected test unit's new configuration is requested.

Take note: **The selected test unit must be turned on for this!**

Reading in a new configuration can take several minutes!

Configure all Test Units:

With the **Configure Test Units** function, you can re-read the configuration into all units. After activating the function and the subsequent confirmation prompt, the re-configuration of all test units is requested.
You can find a complete description of the "Configure Units" function under "Configure Unit x"!

Take note: **All test units must be turned on for this!**

Reading in all new configurations can take several minutes!

Only with the "**Save**" function are all modified parameters stored and the configuration of the modified unit or units can be requested.

Take note: Changing the unit number does not lead to the settings being stored. Only with the "**Save**" function are the changes accepted in all test units.

The maximum admissible conductor length of 15 meters is to be observed for the RS232 connection.

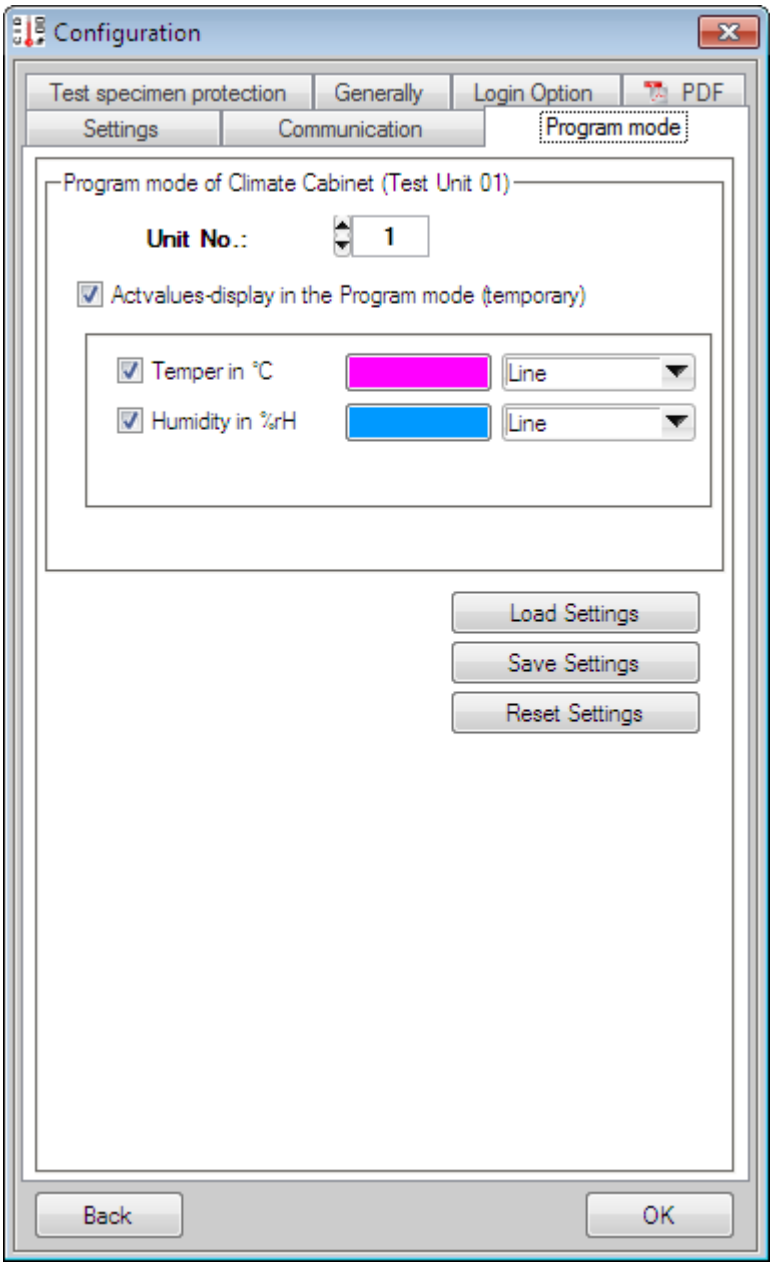
4.2.2.1 Help for adding Test Units into software

To add a new test unit into the CID-Pro 4.02 software, please proceed as follows:

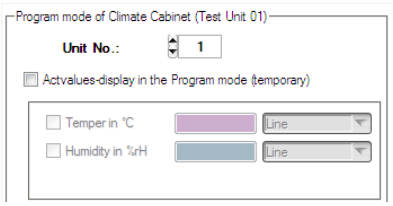
1. Select the **unit number**
2. Enter an **unit designation**
3. Set the **scanning rate** in seconds
4. Select the type of communication:
   a. **Serial parameters:**
      - COM port
      - Baud rate
      - Parity
      - Data bits
      - Stop bits
   b. **Ethernet parameters:**
      - IP address
      - IP port
5. **Test** the **communication**
6. **Save** the entries
7. Read out the **unit configuration** from the controller

4.2.3 Program mode (temporary/transient display)

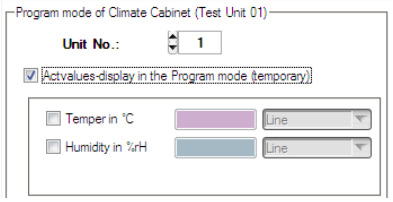
With this function, the actual values of the current unit's selected channel are temporarily, i.e. transiently plotted on the automatic graphic.



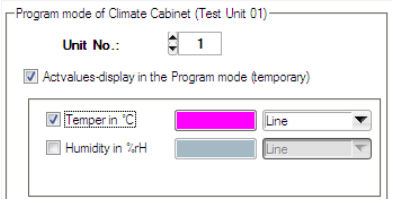
Select the desired unit with the **Unit No** ➔ the channels, which you can display during program operation, are shown (dimmed). Here *temper in °C* and *humidity in %RH:*



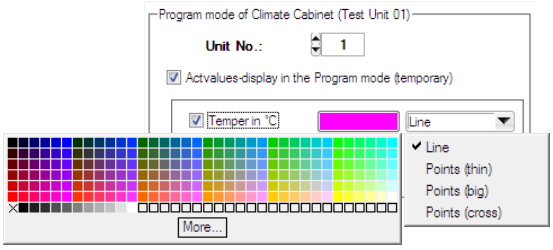
Check marking **Actvalue-display in the program mode (temporary)** activates the function ➔ channel names are activated and can be individually selected:



After activation of an individual channel, here Temper in °C, the channel's settings are also activated:



These settings relate to the colour of the curve and the representation:



Colour:

By default, the colour is displayed like the actual value colour in the channel's status overview, but a tone lighter (e.g. pink instead of light red and turquoise instead of light blue) cf. sec. 4.1.10 - Analogues channels, page 31.
You can arbitrarily change the actual value curve's colour by clicking on the colour field and selecting the appropriate colour. This is then accepted.

Representation:

Representation relates to the form of the actual value curve. The following options are available:

- Line — solid line
- Points (thin) — one thin point per measurement
- Points (big) — one big point per measurement
- Points (cross) — one cross per measurement

Take note:

The defined actual value curves are temporarily plotted during program execution, i.e. CID-Pro 4.02 software does not buffer them or store them into a file. They are exclusively displayed on the automatic graphic.
The temporary actual value curves are only shown during program operation.
Since only one test unit is always active in the status overview, only the current unit's temporary actual value curves are ever shown, insofar as this is desired.
Changes are accepted without OK confirmation.

Load Settings	Load the setting from the stored *ptc file.
Save Settings	Store the current setting into a *ptc file.
Reset Settings	Return the settings to the default settings.

*ptc = **p**rogram **t**emporary **c**onfiguration

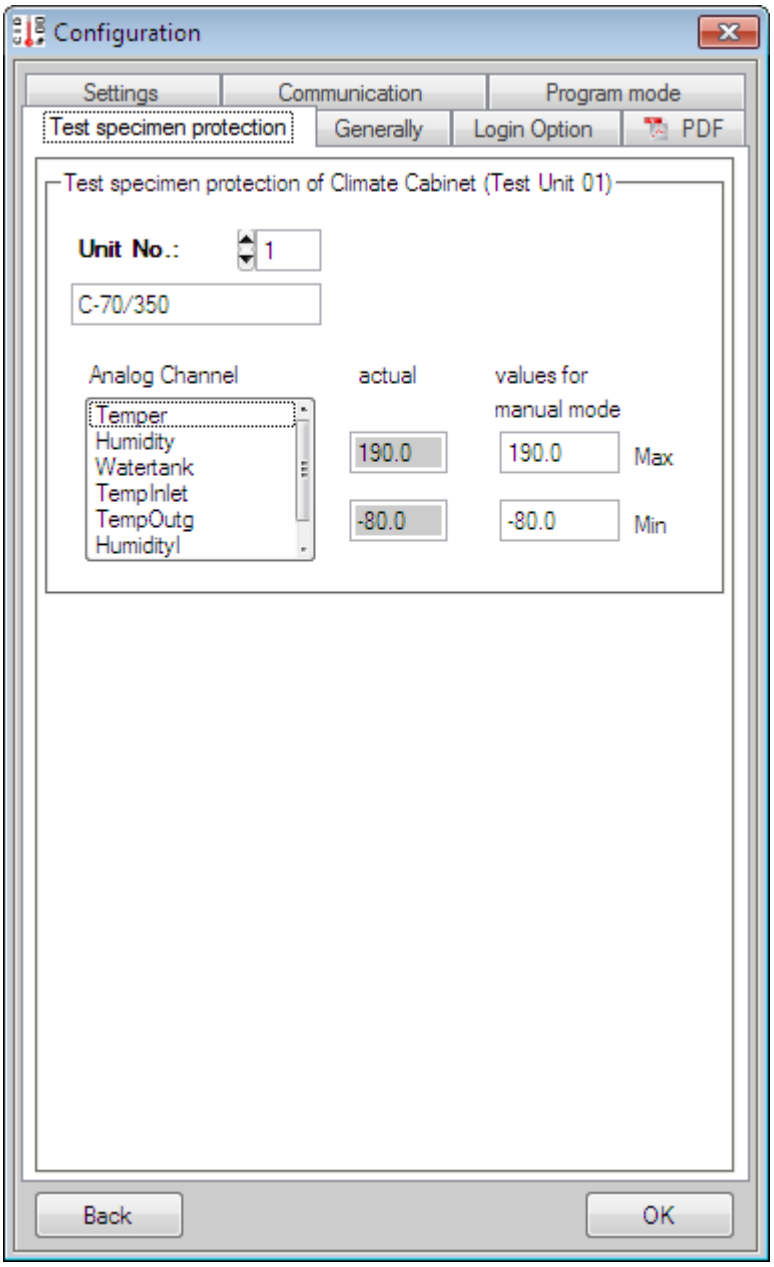
4.2.4 Test specimen protection

The selected unit channels for which software limits can be entered can be seen here. Two value pairs are displayed for each channel. These limits are predefined with the channel's minimum and maximum values. The unit reports an error and shuts down if the channel's actual value undershoots the minimum value or overshoots the maximum value.

Manual operation values can be changed. These values are then transmitted to the unit and apply when the unit is running and was started in fixed value operation.

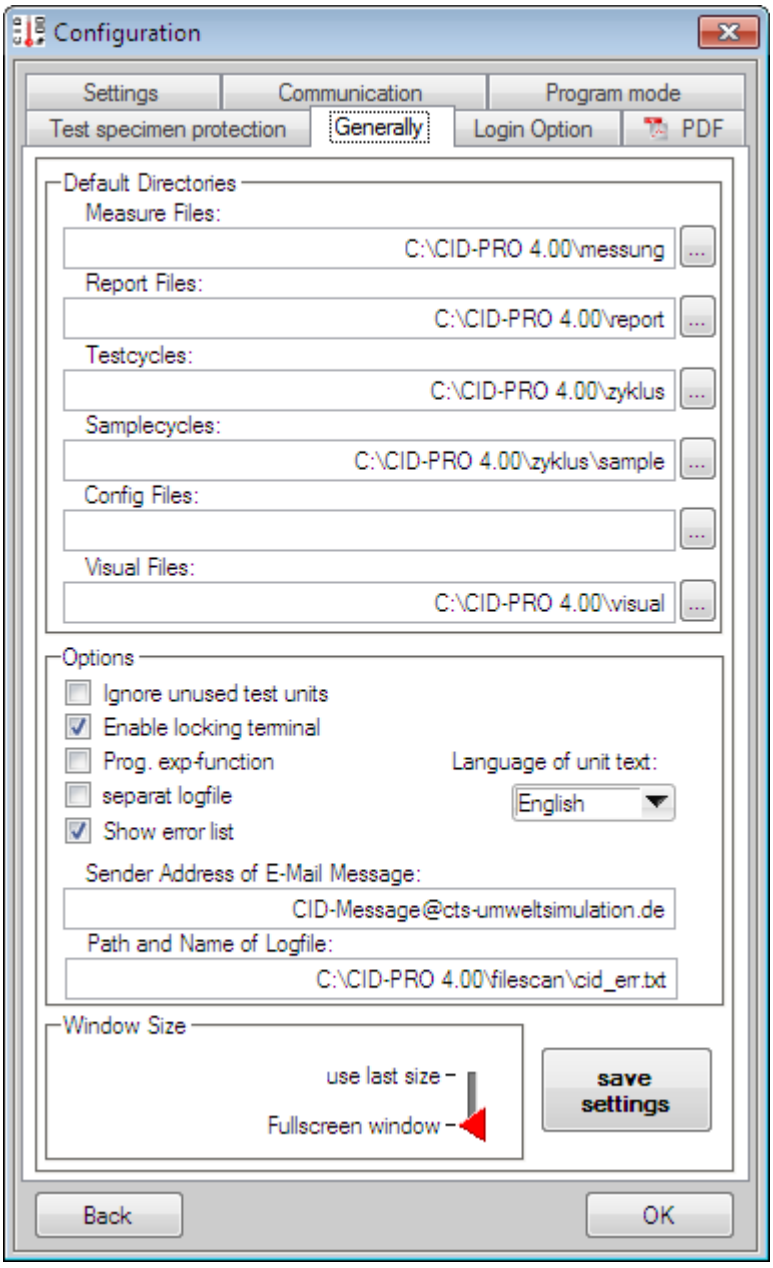
The current limits return which limits is currently stored in the unit.

Manual operation and current values can differ as long as an automatic program is running in the unit. If you change the manual operation values during this interval, they will only become valid after program completion.
Values valid during automatic operation are defined in the editor for the program in question.



4.2.5 Generally

Global settings, default directories, and general options can be adjusted for **CID-Pro 4.02** software in this menu.



Default Directories:
The default directories are the paths for the measurement and report files, test and sample programs, as well as configuration and visualization files.

The configuration files' path is needed to exchange configuration files over the network (**CID-Pro 4.02** client/server operation). Otherwise, the configuration files can always be found in the software's installation directory.

For measurement data, it can make special sense to convert this path to a network path so that backup can occur.

The adjoining button opens a selection window to change the path. A new path is written into the field after confirmation.

Options:

Function	*Significance*
Ignore unused test units:	If this option is set, units that fail to answer a query three times running will no longer be queried. Querying only restarts after selection of the corresponding unit in the status overview or after restarting the **CID-Pro 4.02** software. It can make sense to set this option if you have not consecutively numbered your units starting with 1 because timeouts impacting the reaction time can occur while querying non-present units.

Enable locking terminal:	This option enables locking the unit's control terminal using a key icon in the status overview. **Take note:** If the key icon does not appear even after restarting CID-Pro 4.02 when the option is set, then the connected unit does not support this function.
Prog. exp-function:	The unit's nominal value progressions can be given in the form of exp-functions for special tests. Several input fields are necessary in the editor to activate this function.
Separate log file:	CID-Pro 4.02 software can create an additional file to make message entries in the report file - **only error messages** - accessible to other systems. These can be evaluated by another program. The file's storage location can be given as "**Path and Name of Logfile**".
Show error list:	If the error list (cf. sec. 4.1.12, page 33) is not to be generally displayed in the Status overview, in the event of existing errors/warnings this option must be deactivated.
Sender Address of E-Mail-Message:	CID-Pro 4.02 software can also send e-mails to inform other systems or users of particular events. The desired sender can be entered here. A correct sender is prerequisite on several systems, which even send e-mails (cf. sec. 4.9.3.8 - E-Mail message, page 132).
Language of unit text:	Selection of the unit text language of the texts stored in the controller. In this connection, channel names, among other things, can be displayed in German or English.

Window Size:
CID-Pro 4.02 software window sizes can be set here. All screens are laid out in the default 1280 x 1024 pixel size. Several windows' dimensions can be changed, however. Enlarging the window does not just create a zoom effect, but also a partial rearrangement of the window's content so that the information can be presented as clearly as possible.
The setting can be selected by positioning the red marking arrow. The setting then applies to all CID-Pro 4.02 software and is retained even after restart.

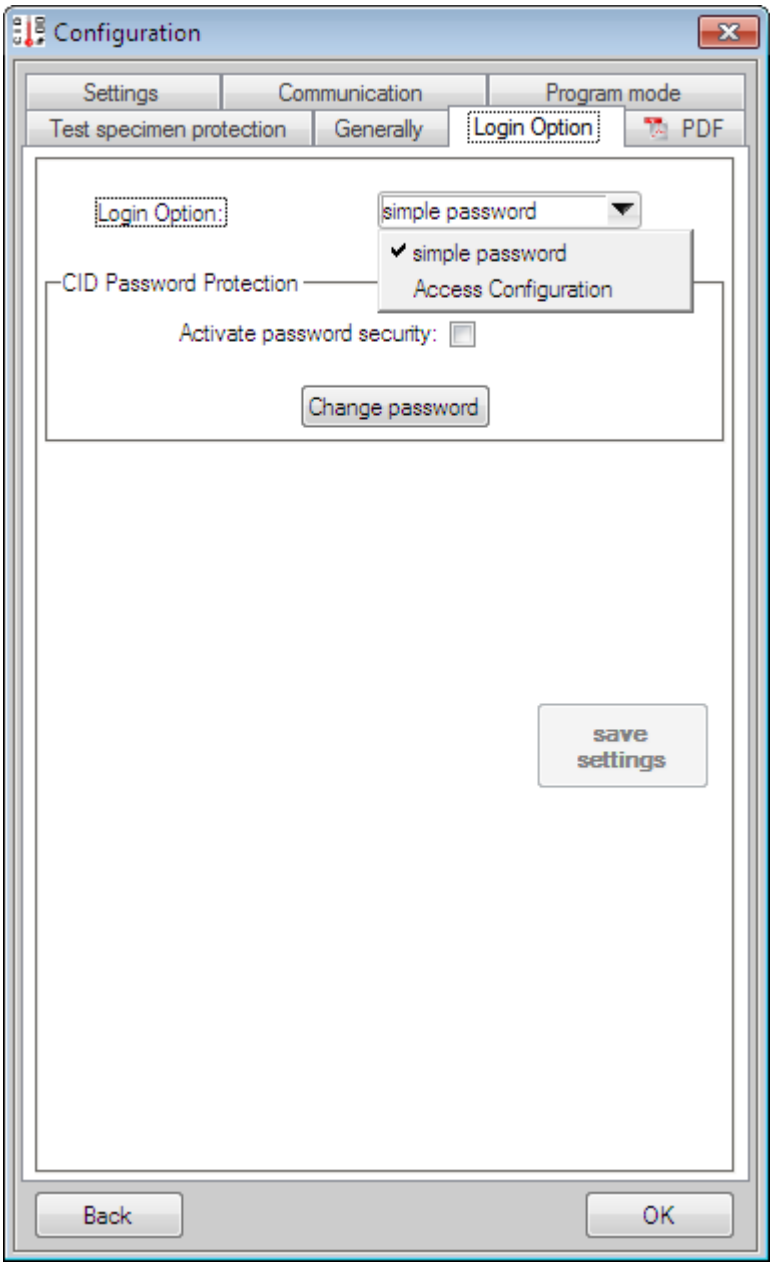
Use last size: The sizes of the Status overview, Test-cycle program editor and Graphical measurement-data analysis windows can be changed. The most recently set dimensions are used the next time the window is opened.

Fullscreen window: The sizes of the Status overview, Test-cycle program editor and Graphical measurement-data analysis windows are expanded (maximized) on opening to exploit the entire display.

Take note: **smallest size: 1000 x 700**
All changes are only accepted with the "save settings" function and are completely effective after a restart.
These settings are program global and apply to all test units.

4.2.6 Login Option

CID-Pro 4.02 is provided with two access authorization versions (the menu changes depending on the selected authorization):

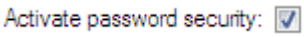


4.2.6.1 Simple password

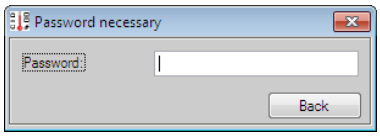
A simple password should be used when a complete **CID-Pro 4.02** software lockdown is desired. The entire interface can be locked this way by entering a password. All areas can be opened and displayed in this mode. Changes, however are ignored with the message

Password security is active. Function is not available.

You protect **CID-Pro 4.02** from unauthorized access with **Activate password security**.



Therefore the password query



opens. The password on initial program start is:

cid-pro

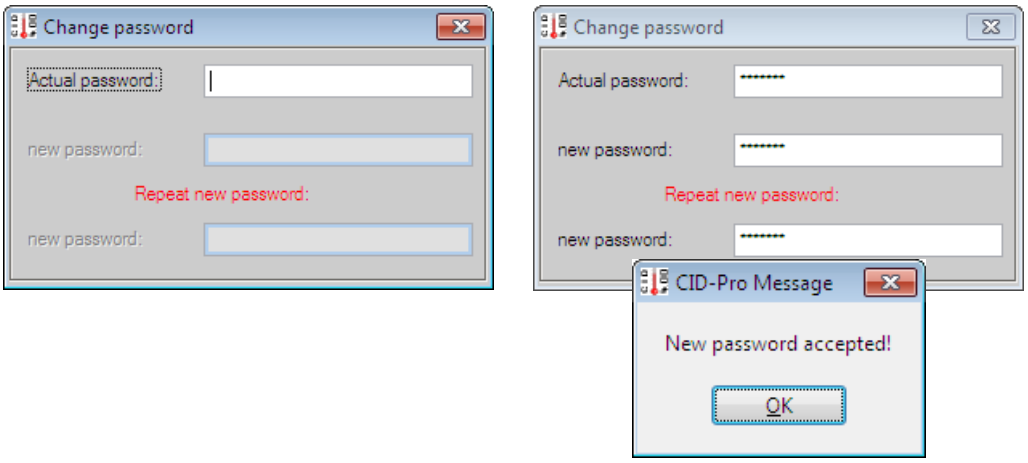
Take note: Please pay attention to case (upper / lower case).

If the password is correct, CID-Pro 4.02 prevents all write accesses by the user to the test unit or files.

The following actions are no longer possible:

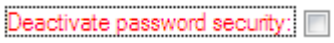
- Setting set analogue channel values
- Changing digital channels
- Accessing the automatic display
- Accessing the recording display
- Recording termination
- Storing generated cycles in the editor
- Changing comments while measuring
- Configuring the test units
- Exiting CID-Pro 4.02

You can change the default password to your own password with the **change password** button:



Enter the current password into the **Actual password** text field. If the password is correct, you can enter a new password. You must re-enter your password to ensure that you haven't mistyped. The new password is accepted only when both entries are identical.

You deactivate simple password protection with a click on the **Deactivate password security** function and subsequent entry of the correct password in the confirmation prompt.



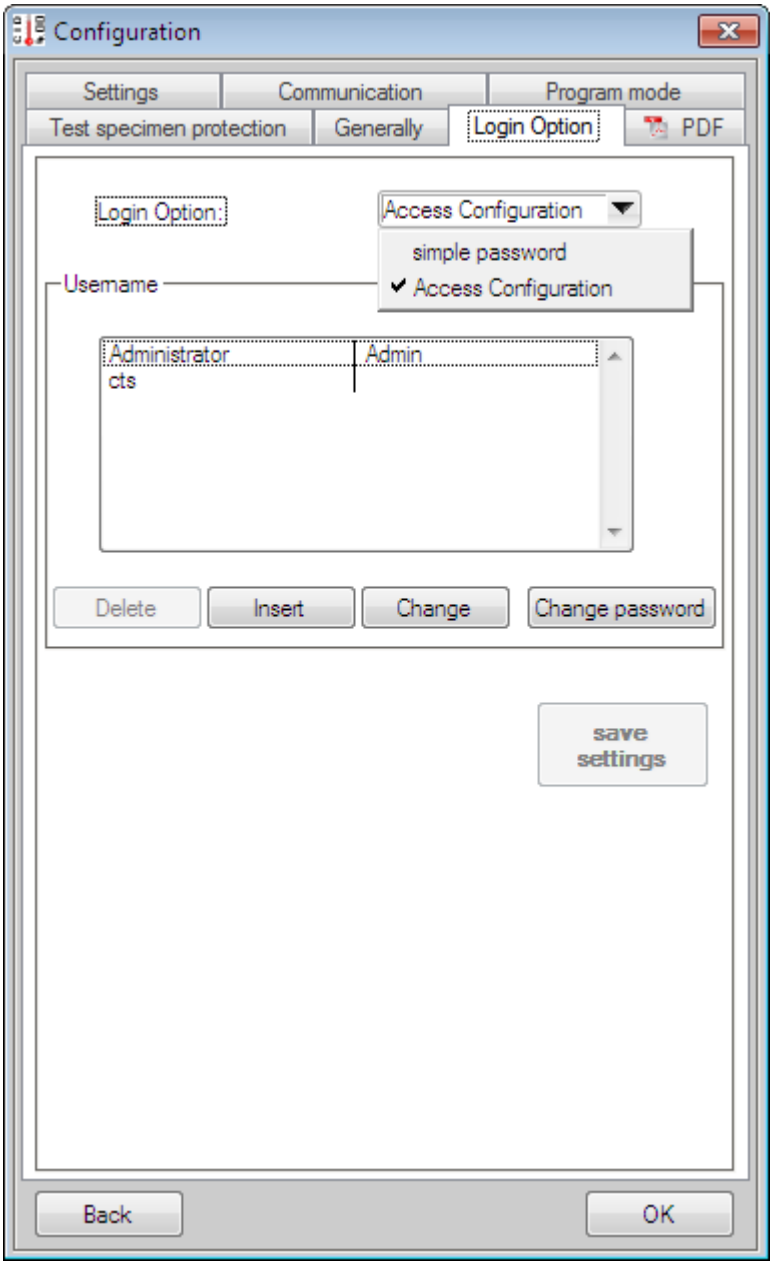
Take note: Simple password activation/deactivation acceptance occurs immediately and requires no additional storage.

To accept mode change from **simple password** to **access configuration** and visa versa, the setting must be stored with the **save settings** button and CID-Pro 4.02 software must be restarted.

4.2.6.2 Access Configuration - Settings

User administration allows and requires creation of users with appropriate privileges for individual program parts. A user logon is always required then. Changes can be assigned to a user.

Take note:
CID-Pro 4.02 software must be restarted after selecting access configuration so that the settings can be accepted.



The list of user names presented here shows all established users.
The second column shows whether the user possesses administrative privileges. Only users with administrative privileges may create new users, or delete or change existing users.

There must therefore be at least one user with administrative privileges.

After the initial installation, there is only one user:

Administrator

with the password:

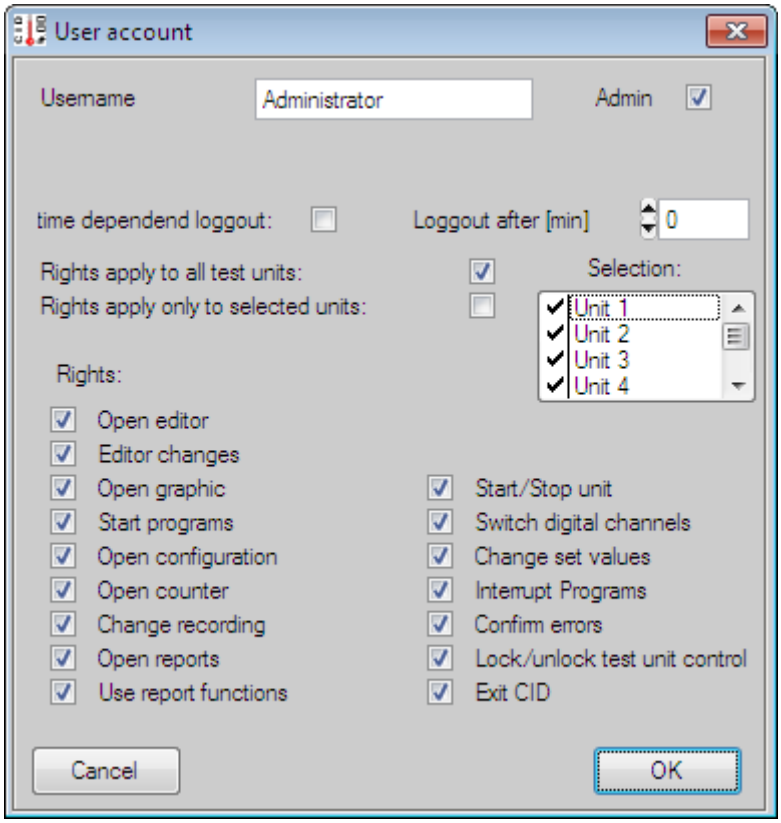
cid-pro

Take note: Please pay attention to case (upper / lower case).

If you are logged on with administrative privileges, you can use the **Insert** and **Change** buttons to determine user privileges, or remove a user with **Delete**.

Administrator settings:

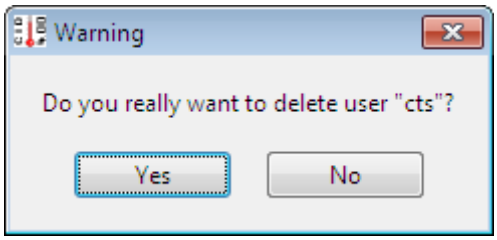
The administrator has full access. That means that all privileges are checked for the administrator so that he has no limitations in regard to individual functions and the various test units.



Furthermore, he has the option of editing other users with the **Admin** function.

Delete user:

Mark the names of the users to be deleted in the list and click the **Delete** button. Your entry will be subsequently checked with the following confirmation prompt:

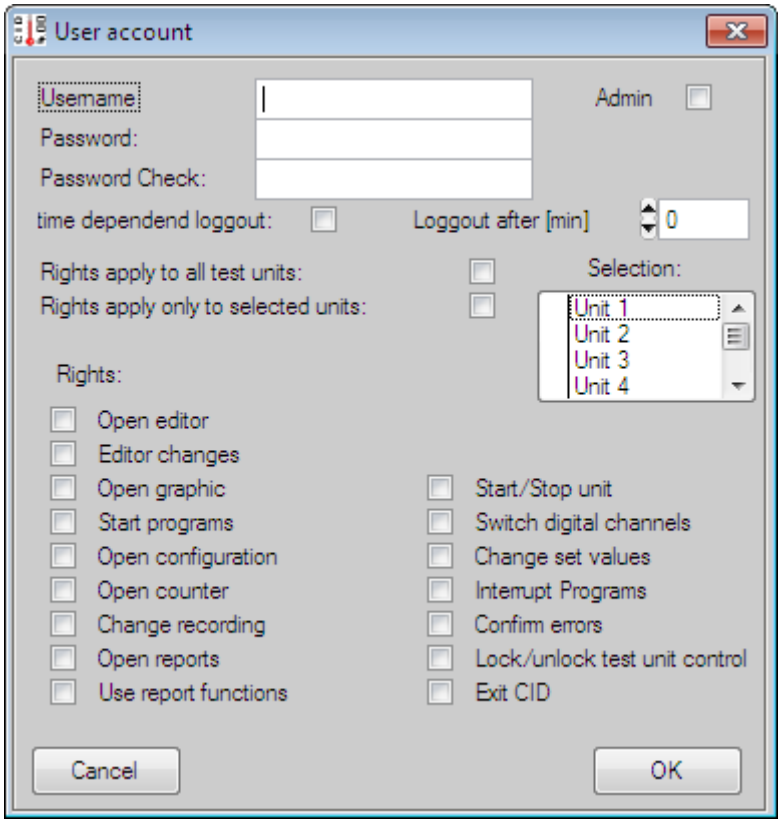


The user to be deleted, here "**cts**", will be redisplayed.
With **Yes**, the user is finally deleted; with **No**, the deletion function is ignored.

Take note: Deleted users are irrevocably lost!!!

Insert user:

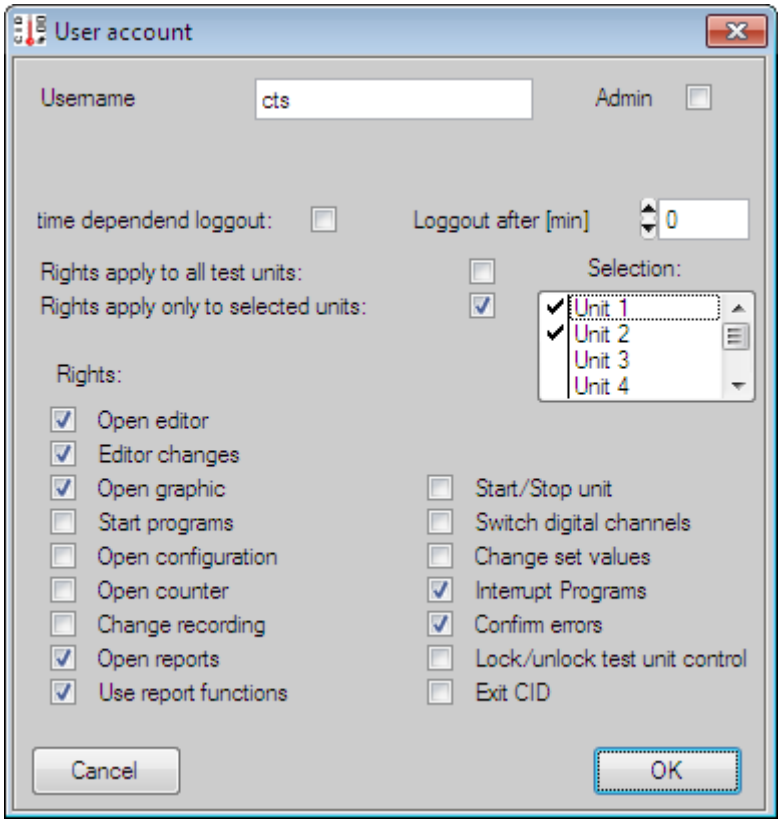
You add a new user with the **Insert** button. Hereupon a window opens that you can supply with the user name, password and repeat password, timed logout, units assignments, and privileges.



With **OK**, the settings, and therewith the new user, are accepted.
With **Cancel**, new user creation is ignored.

Change user:

If you would like to retroactively assign other privileges to the new user, mark the user you would like to change in the user list and click on the **Change** button. The properties of the user to be modified are subsequently displayed.

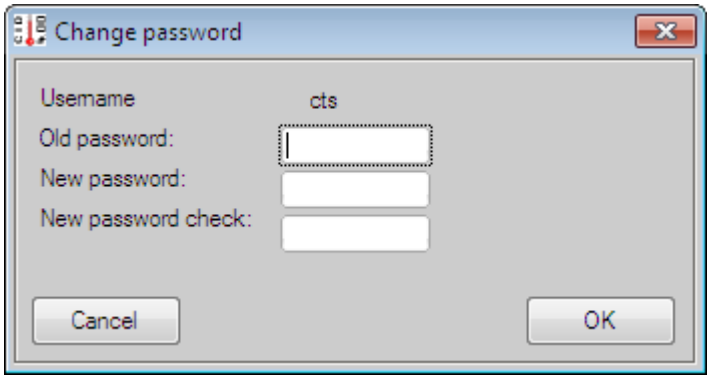


Now modify the user's name, timed logout, unit's assignment or privileges.

The modified settings are accepted with **OK**.
The user modifications are ignored with **Cancel**.

Change password:

If you want to change a user's password retroactively, mark the user whose password you would like to modify in the user list and click on **Change password**. Now enter the current password into the **Old password** text field in the window that appears. If the password is correct, you can enter a new password. You must re-enter your password to ensure that you haven't mistyped. The new password is accepted with **OK** only when both entries are identical.



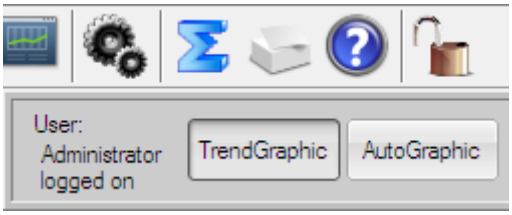
Take note:

Acceptance of changes in **access configuration** occurs globally, requiring no additional storage as long as you possess change privileges.

To accept mode change from **simple password** to **access configuration** and visa versa, the setting must be stored with the **save settings** button and CID-Pro 4.02 software must be restarted.

4.2.6.3 Access Configuration - In runtime operation

The status of logged on users is displayed in the status overview if you have activated access configuration:

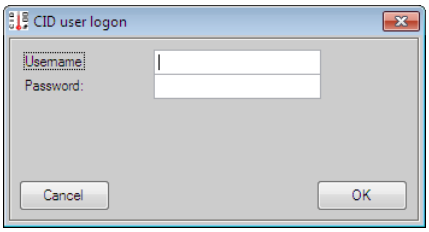


The meaning of the “key” symbol and user text is as follows:

	Access Configuration			
	Inactive	**active**		
	inactive	**open / logged on**		**locked / not logged on**
Symbol	---			
Entry menu bar	---	User: **Administrator** logged on	User: **cts** logged on	User: **No user** logged on
Explanation	No entry present.	The user is **logged on** as “administrator” in this mode and consequently has full access to all of the software’s functions.	In this mode, the user has **logged on** as “cts” and has the privileges that were defined for user administration.	In this mode, no user is logged on. That means you have **no** privileges to execute the defined functions to service the software.

User logon:

Click the closed lock symbol and you can logon yourself with user name and password:



User logoff:

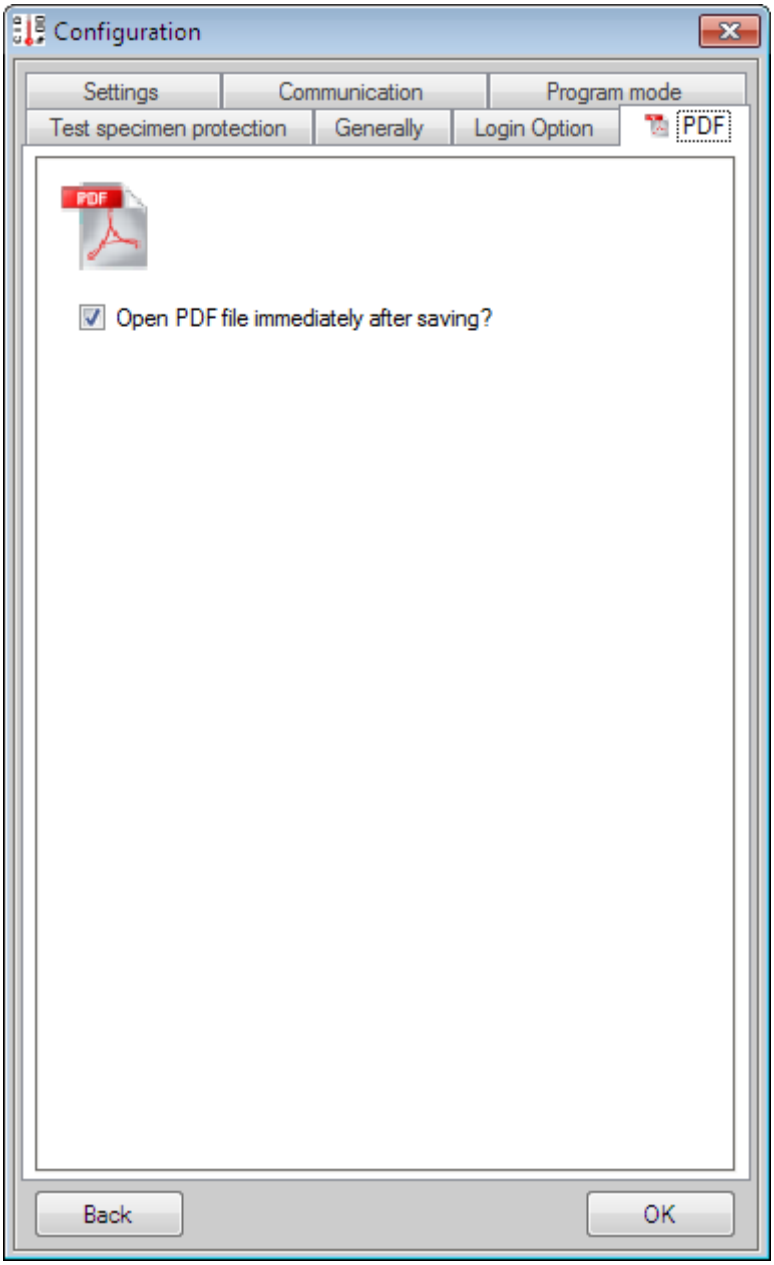
Click on the open lock symbol and the mode switches automatically to locked operation mode.

4.2.7 PDF Settings

In the **PDF settings** the following options may be selected:

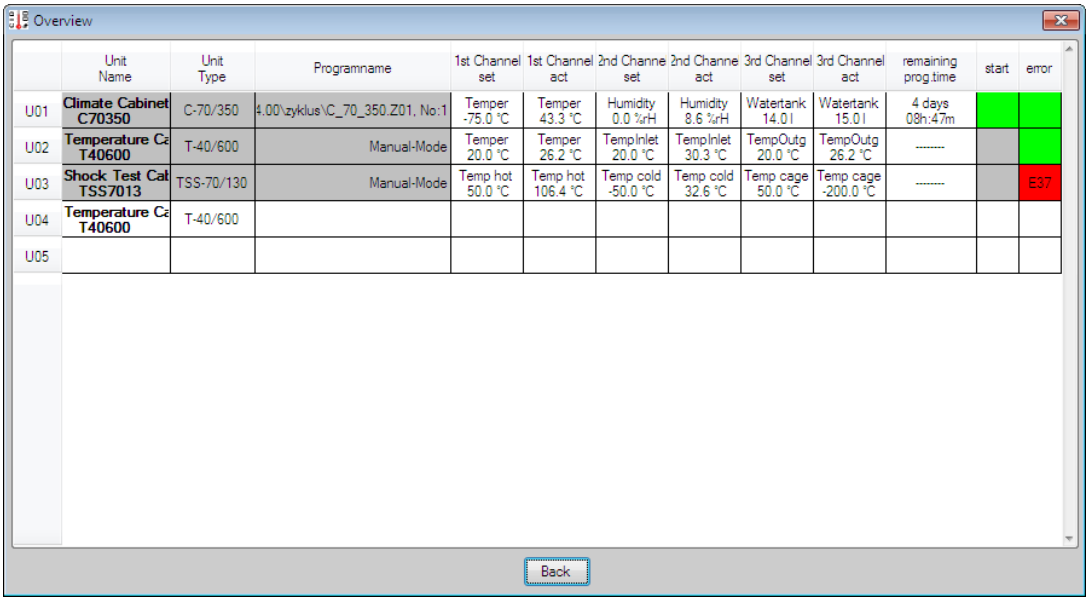
- **open immediately?**

  Check this box to select whether the PDF files created and saved in the various CID-Pro menus are to be opened immediately.



4.3 Overview of all test units

Here you receive clear information about the state of all displayed test units. The information can be viewed but not changed.



The following information is displayed:

- **Self-defined Unit Name/ units commission-number:** To better distinguish the units, the self-defined, meaningful unit name and unique commission number are shown.
- **Unit Type:** Unit's type (from unit's controller)
- **Mode/ Program name:**
  Manual Mode: "Manual-Mode" entry
  Program Mode: test program entry with complete path.
- **First 3 analog channels:** Display of set and actual values of the first three analogue channels. If only two channels are present, the third channel's set and actual values field is empty.
- **Remaining Prog. time:**
  Manual Mode: ----
  Program Mode: test program's remaining runtime
- **Start status:**
  green: unit started
  orange: unit started - Pause
  grey: unit stopped
  white: no communication with the unit
- **Error status:**
  green: no error
  red: ERROR } with display of the/an
  yellow: Warning } error number

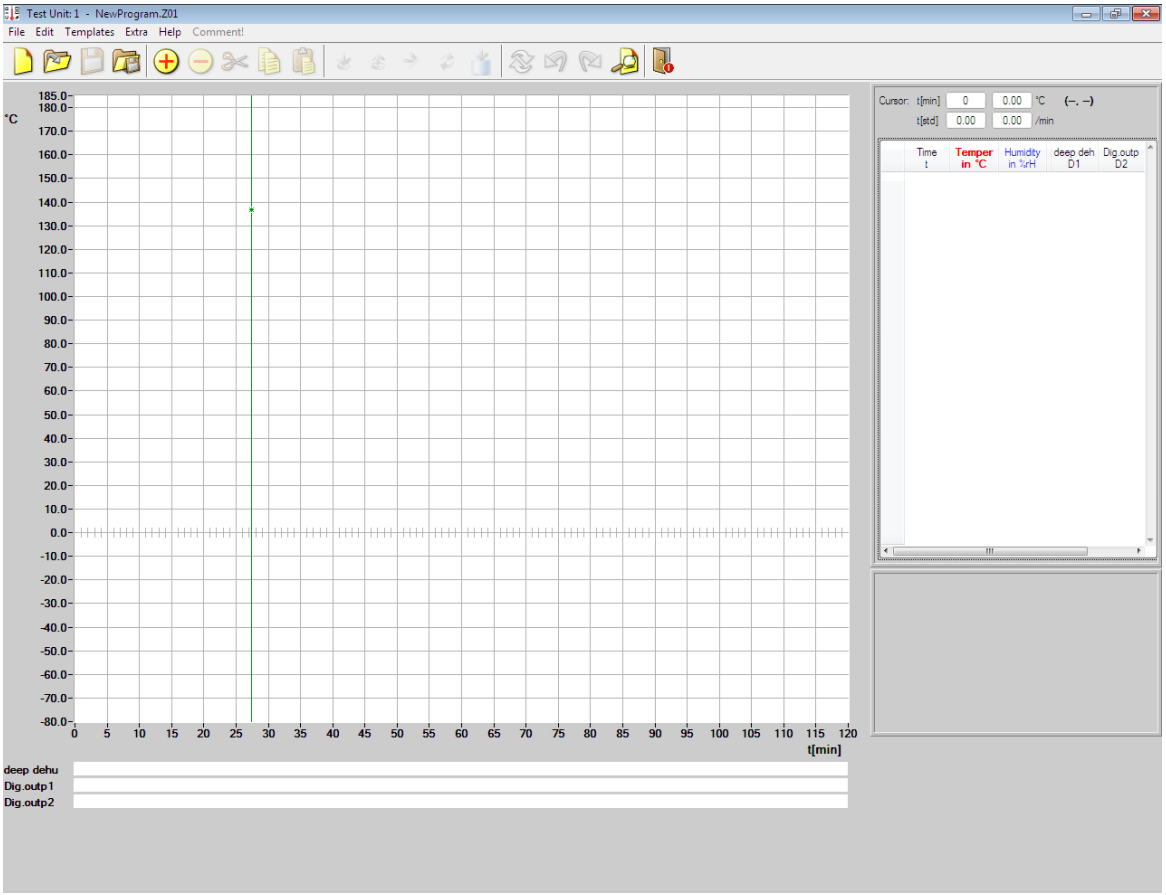
With the Back button, you return to the status overview display.

Take note: With more then **12 units**, the window can be enlarged from top to bottom.

4.4 Test-cycle program editor

4.4.1 Preface

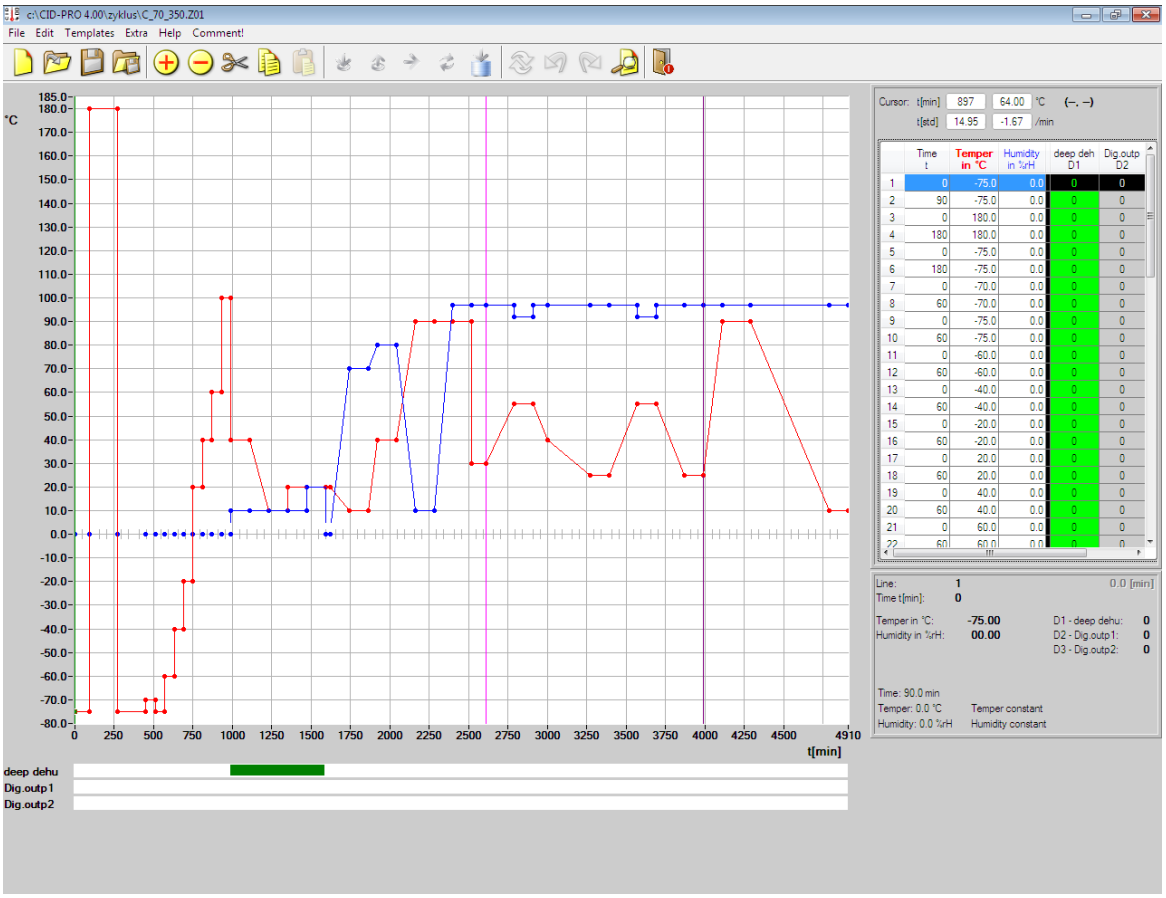
If you open the editor, you will find yourself in “New test program” and can get started immediately. Now the editor’s layout can certainly differ somewhat depending on which unit you want to create the test program for. You only have available the analogue and digital channels enabled by the controller of the unit in question. The active unit’s, e.g. unit 1’s, **configuration** is therefore loaded during editor start-up. Two analogue (temperature and humidity) and three digital (deep dehumidification, digital output 1 and digital output 2) channels are available to you here in this example. Unit 2 provided other channels again. Editor layout is dynamic. This means that the editor is updated when a different unit is selected.



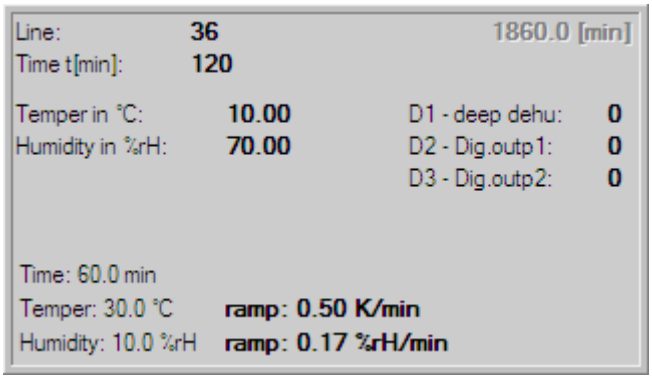
Enter on the right a list of program lines that the test unit should execute into the area. This list can contain

- **value lines** (lines in which selected digital and analogue values are defined),
- **loops** (a command sequence that is multiply repeated),
- **subprograms** (program parts (modules), which are separately stored), and
- **conditional jumps** (jump to a selected target when a condition is fulfilled).

These individual lines are depicted on the graph (large area). The upper area, the y-axis, is reserved for analogue values and the lower area for digital values. The x-axis defines the test program's temporal progression.
Analogue value lines are connected by line (value and time axis).
Digital states are displayed as bars.
Loops, subprograms, and conditional jumps are seen as coloured, vertical markings.



Statement of all important line information at a glance:



- Line number and time
- Analogue and digital channels with wait function if available
- Relationship to next line: ramp with gradient, constant distribution or jump with statement of X and Y axis segments (time and temperature/humidity difference)

4.4.2 Buttons

Menus	*Symbol*	*Submenus*		*Also in tool bar*	*Key combination*	*Reference*
File		**New ...**		**X**	**Ctrl+N**	New test program cf. sec 4.4.4.1, p. 69
		Open...		**X**	**Ctrl+O**	Open test program cf. sec 4.4.4.2, p. 69
		Save		**X**	**Ctrl+S**	Save (as) test program cf. sec 4.4.4.3, p. 70
		Save As		**X**	**Ctrl+A**	
		---	**Printer/Page install**		**Ctrl+I**	Printer/page setup and print … cf. sec 4.4.4.5, p. 71
		Print...	**Print Graphic**		**Ctrl+G**	
			Print List		**Ctrl+L**	
			Print Both		**Ctrl+B**	
			Print Screen		**Ctrl+T**	
		Print as PDF…	**Print Graphic as PDF**			Print as PDF... cf. sec 4.4.4.6, p. 72
			Print List as PDF			
			Print Screen as PDF			
	---	*Files last opened*				*Open test program (4.4.4.2)*
		Exit		**X**	**Ctrl+E**	Exit the editor
Edit		**Insert Line**		**X**	**Ins**	Edit lines (insert, change, delete, cut, and copy) with keyboard/menu functions cf. sec 4.4.3.1, p. 60
		Delete Line		**X**	**Del**	
		Cut Line		**X**	**Ctrl+X**	
		Copy Line		**X**	**Ctrl+C**	
		Paste Line		**X**	**Ctrl+V**	
		Block copy/insert ...			**F6**	Block of lines cf. sec 4.4.4.7, p. 72
		Block delete ...			**F7**	
		Insert Start of Loop		**X**	**F2**	Loop (loop beginning and end) cf. sec 4.4.4.8, p. 74
		Insert End of Loop		**X**	**F3**	
		Call Subprogram		**X**	**F4**	Call Subprogram cf. sec 4.4.4.9, p. 75
		Insert Conditional Jump		**X**	**F5**	Conditional jump cf. sec 4.4.4.10, p. 76
		Insert Program		**X**	**F10**	Insert Program cf. sec 4.4.4.11, p. 77
		Refresh			**F11**	Refresh the editor
Templates		**Templates**				Templates cf. sec 4.4.4.12, p. 78
Extras		**Options**			**Ctrl+P**	Options (editor) cf. sec 4.4.4.13, p. 79
		Delete Program			**Ctrl+D**	Delete test program cf. sec 4.4.4.4, p. 70
		Gradient ...	**...with (Valued Calculation)**		**F8**	Set Gradient cf. sec 4.4.4.14, p. 82
			...to (Time Calculation)		**F9**	
		Save File in Data pool ...			**Ctrl+F**	Save file in data pool cf. sec 4.4.4.15, p. 86
		Save File as Library ...				Save file as library cf. sec 4.4.4.16, p. 86
		Delete Template(s) / Library(ies)				Delete Templates and Libraries
Comment!						Comment (editor) cf. sec 4.4.4.17, p. 87
		Zoom functions				Zoom functions (editor) cf. sec 4.4.4.18, p. 88

4.4.3 Generate a test cycle

To enter a new test program's points, you can place the desired points on the graph with the mouse or enter the values directly into the list.

4.4.3.1 Edit lines (insert, change, delete, cut, and copy) with keyboard/menu functions

1. Insert value line

With the '**Ins**' key or the symbol a new value line is entered into the list. This line contains the same analogue and digital values as the previous line except for time information. This amounts to 0 after the insertion.
All values are 0 if you insert a new line into an empty program or after a loop, a subprogram or conditional jump because no defined value is given here.

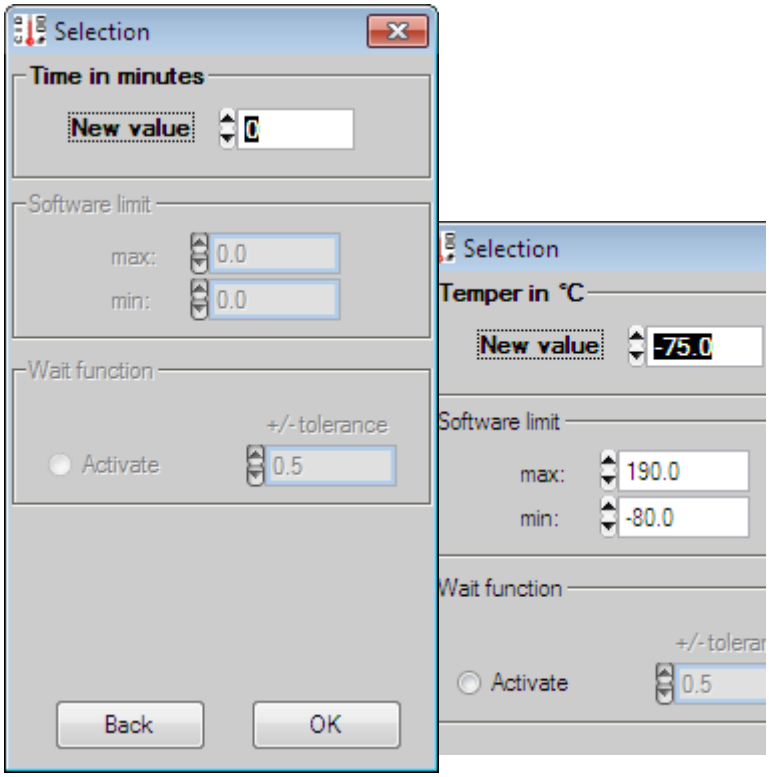
2. Change line

This time, as well as all other **analogue** values, can be changed with the '**Enter**' key if the desired field is selected (the field is then blue), or by double clicking the left mouse button on the desired field. A window now appears containing the old value. This can now be changed or re-entered.
The desired action is also shown above the new value to avoid errors. **Time in minutes** is shown here.

Pressing OK accepts the new value, updating the graph and list if needed. Pressing Back ignores changes closes the window.

Time changed this way in the list is always the line's run time. These run times are lined up on the graph for the complete test cycle.

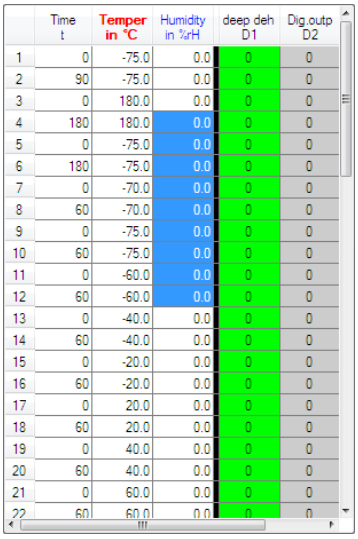
Digital values can be changed or negated with the '**Enter**' key if the desired field is selected, or by double clicking the left mouse button on the desired field.
This updates the graph - bar display in the lower area.



A window with the corresponding values opens when changing a loop, subprogram, or conditional jump line. You can then change values like the number of loop interactions when starting a loop.

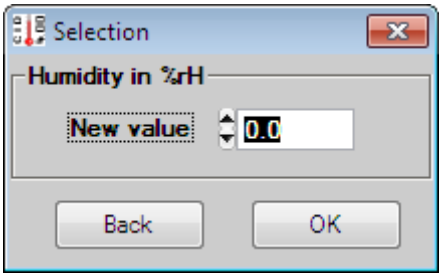
3. Edit multiple lines

Indicate the fields which you want to set to the same value:



	Time t	Temper in °C	Humidity in %rH	deep deh D1	Dig.outp D2
1	0	-75.0	0.0	0	0
2	90	-75.0	0.0	0	0
3	0	180.0	0.0	0	0
4	180	180.0	0.0	0	0
5	0	-75.0	0.0	0	0
6	180	-75.0	0.0	0	0
7	0	-70.0	0.0	0	0
8	60	-70.0	0.0	0	0
9	0	-75.0	0.0	0	0
10	60	-75.0	0.0	0	0
11	0	-60.0	0.0	0	0
12	60	-60.0	0.0	0	0
13	0	-40.0	0.0	0	0
14	60	-40.0	0.0	0	0
15	0	-20.0	0.0	0	0
16	60	-20.0	0.0	0	0
17	0	20.0	0.0	0	0
18	60	20.0	0.0	0	0
19	0	40.0	0.0	0	0
20	60	40.0	0.0	0	0
21	0	60.0	0.0	0	0
22	60	60.0	0.0	0	0

Use the '**Enter**' button to open a window.
The indicated fields can be edited here.



Take note: Only multiple-value lines can be edited. If there is a no-value line (e.g. loop start) in the indicated range, the action is interrupted. That means, after pressing the '**Enter**' button the window does NOT open.
Thus, a digital channel can be edited.

4. Delete lines

With the '**Del**' key or the symbol the currently active line is deleted from the list, and thus from the graph. For safety, you are requested to confirm line deletion.

Take note: With the '**Del**' key or the symbol you can also delete entire blocks besides a marked line. For example, if you mark an arbitrary number of lines in the first column (time), you can completely delete these lines (cf. sec. 4.4.4.7 - Copy/insert a block of lines / delete a block of lines, page 72).

5. Copy lines

With the '**Ctrl'** + '**C**' key combination or the symbol the currently active line is copied. This line is now available for you to insert as a copied line (cf. point 7 – Paste line copy)

Take note: With the ‚**Ctrl**' + ‚**C**' key combination or the symbol you can also copy entire blocks besides a marked line. For example, if you mark an arbitrary number of lines in the first column (time), you can completely copy these lines (cf. sec. 4.4.4.7 - Copy/insert a block of lines / delete a block of lines, page 72).

6. Cut lines

With the '**Ctrl**' + '**X**' key combination or the symbol the currently active line is copied **and** removed from the list and graph. For safety, you are requested to confirm line cut. This cut line is now available for you to insert as a copied line (cf. point 7 – Paste line copy).

Take note: With the '**Ctrl**' + '**X**' key combination or the symbol you can also cut entire blocks besides a marked line. For example, if you mark an arbitrary number of lines in the first column (time), you can copy these lines into the cut buffer. This marked block is ultimately deleted ➔ cut (cf. sec. 4.4.4.7 - Copy/insert a block of lines / delete a block of lines, page 72).

7. Paste copied lines

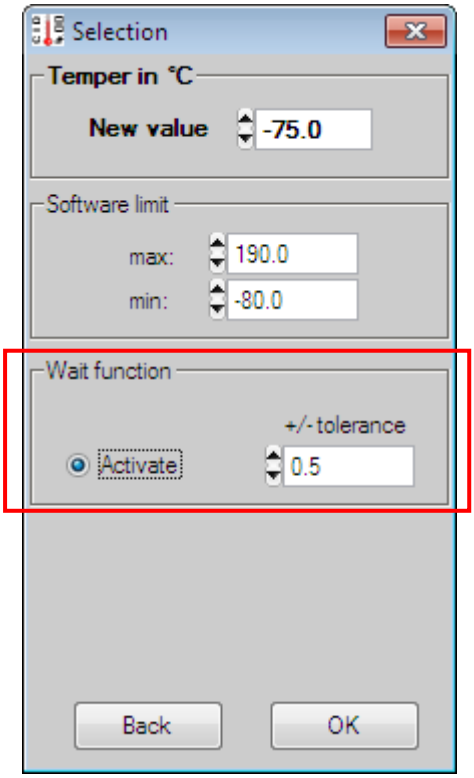
The '**Ctrl**' + '**V**' combination or the symbol inserts the copied line (cf. sec. 5 and 6 - Copy/cut line) **after** the currently active line and updates the list and graph.

Take note: With the '**Ctrl**' + '**V**' key combination or the symbol you can insert entire blocks besides a marked line. If you have previously marked and copied or cut a block, it is inserted **after** the currently active line and the list and graph are updated (cf. sec. 4.4.4.7 - Copy/insert a block of lines / delete a block of lines, page 72).

8. Wait function

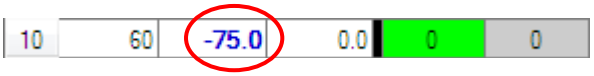
If you want to assign a wait function to a particular value, proceed exactly as when changing a value line (cf. point 2 - Change line): With the '**Enter**' key if the desired field is selected, or by double clicking the left mouse button on the desired field.

Now you have the option of marking (place point in the preceding field) the **Activate** field in the Wait function area. By setting the wait function, you can now enter the tolerance within which the value is permitted to move, so that the program can continue running. This tolerance signifies the discrepancy between the nominal and actual value, which must be undershot before this line counts as completed. That means that a tolerance threshold of 0.0 stops the program at this place since this difference cannot be undershot.
For the most part, a tolerance of 1K for the temperature channel and 3-5 %rH for the humidity makes sense.



The value is accepted after confirmation with OK. With an activated wait function, the list entry format changes from thin black

to heavy blue

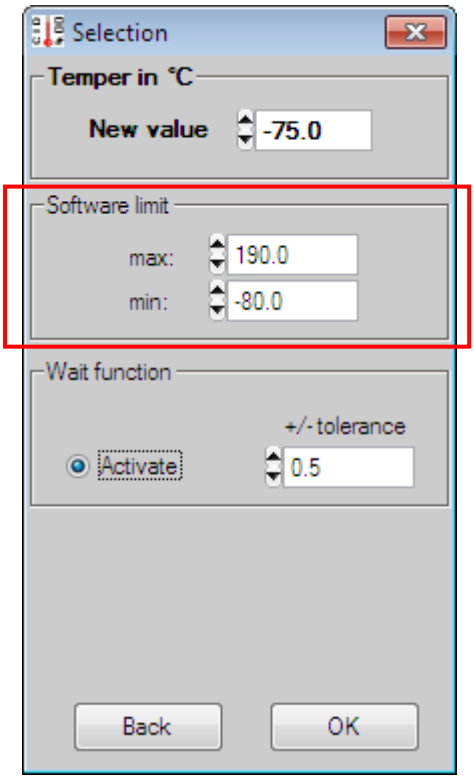


The wait function causes the controller to wait long enough after completion of the line for the actual value to reach the analogue channel's tolerance. Only then is the next line executed.

Take note: Only **one** channel per line can be assigned a wait function.

9. Software limit

It is possible to set a software limit for each analogue channel.
A software limit means that the unit reports an error and shuts down as soon as the channel's actual value lies outside of the permitted range.
These limits are transmitted to the controller when the test program is started. The limits are valid while the program is running. If the program terminates, the limits valid before the program started become valid again (cf. sec. 4.2.4 - Configuration: Test specimen protection, page 43).
A channel's limits can be entered in any arbitrary line.



Minimum and maximum limits of 0.0 are entered respectively if you have already worked with earlier CID-Pro program versions. In this case, channel limitation occurs in accord with its input limits.

Take note: For Points 5-7 (copy/cut/paste lines) there is a **cross-program line resp block storage**:
Copy a line/block in the first program and insert this copy into the new or second program.

4.4.3.2 Insert line and change graph with the mouse

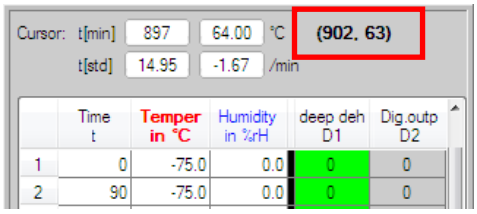
1. Insert value line

For an empty program, you have the option to set a point by clicking the left mouse button. The first click in the graph plots a point at time 0 and the value at where the mouse points (initialization point). All other points are plotted as follows:

- **Time axis (x coordinate):** coordinate is snapped to the nearest (forward or backward) full second, minute, or hour.
- **Values axis (y coordinate):** coordinate is plotted on the exact value at which the mouse is pointing.

The point plotted with the channel's colour: temperature ➔ red

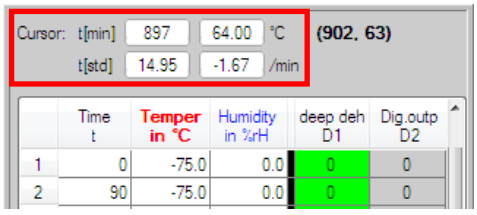
The information on the upper right edge facilitates exact point plotting, since it shows the mouse coordinates relative to the graph.
So, in this example:
902 min and 63 °C
(Information depends on displayed scale)


Cursor: t[min] 897 64.00 °C (902, 63)
t[std] 14.95 -1.67 /min
Time t
Temper in °C
Humidity in %rH
deep deh D1
Dig.outp D2
1 0 -75.0 0.0 0 0
2 90 -75.0 0.0 0 0

When clicking on the graph and plotting a point, a value line is simultaneously created in the table showing the new point‘s values.

All points needed for the test cycle can now be successively plotted in the same way, i.e. you plot one point after the other from a temporal perspective. Since points are immediately connected, you can only plot points in a free area of the graph (toward the right). If you want to plot a point between already existing points, please refer to the procedure from point 3 - Retroactively insert a values line.

A green cursor tracks during the creation of such a point, showing you where you last clicked the graph or plotted a point. This cursor orients itself to a grid that you can define in the editor’s options (cf. sec. 4.4.4.13 - Editor options, page 79).


Cursor: t[min] 897 64.00 °C (902, 63)
t[std] 14.95 -1.67 /min
Time t
Temper in °C
Humidity in %rH
deep deh D1
Dig.outp D2
1 0 -75.0 0.0 0 0
2 90 -75.0 0.0 0 0

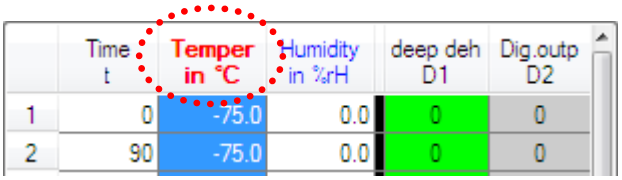
If the cursor changes, change parameters are shown in both dimensions:

- Change time in minutes and hours — 897 min and 14.95 hours
- Current channel value — 64.0 °C
- Gradient in *unit*/min — -1.67 K / min

Up to now, a point on the graph was defined with **one** analogue channel and time. That's alright too, if you have a unit with one channel. If your unit has several controllable channels, however, you must have the option of changing this control channel:

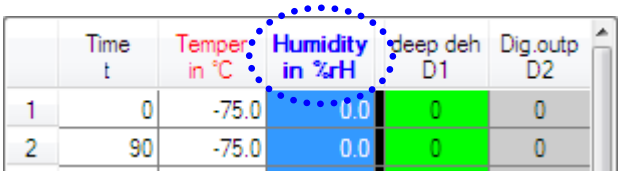
Creation of (red) temperature points:

Click on:
Temper in °C



Creation of (blue) humidity points:

Click on:
Humidity in %rH



The conversion occurs via the table column definition, by which the editor shows what kind of point you want to create.

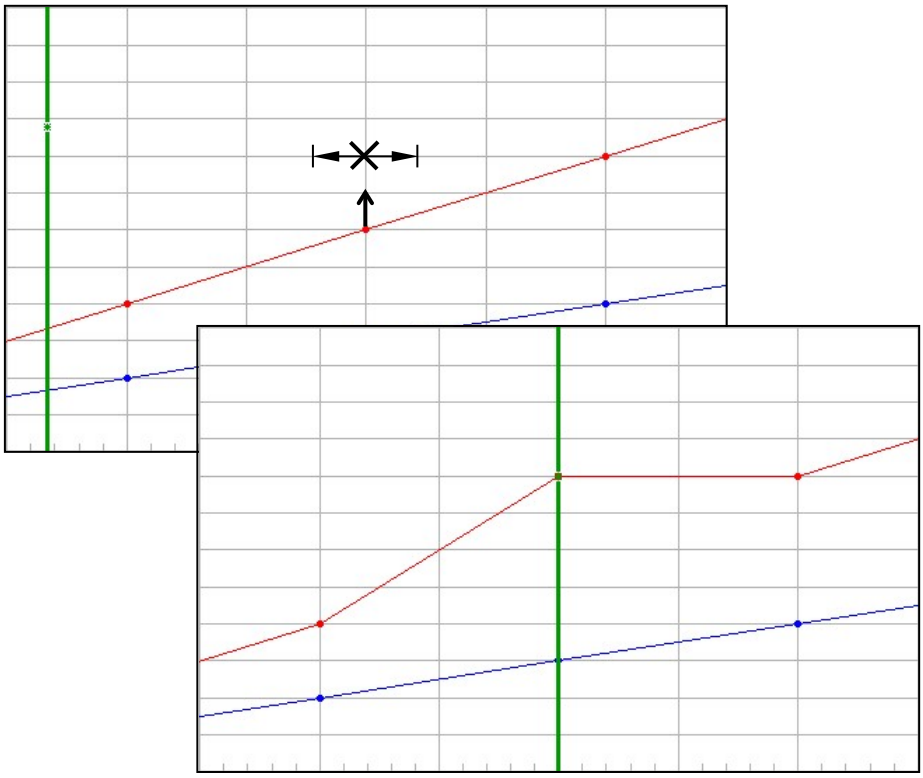
If you define a point after the conversion to humidity, a blue point with a blue line is drawn on the graph and a value line is created in the list with the new humidity value. In this case, the last temperature value is copied, i.e. the graph shows a temperature line with zero gradients and the list copies the last value.

If you try to create a point outside of the channel's permitted range, it will be pegged to the minimum or maximum permitted value. For example, if you plot a humidity point < 0 %rH, this will be pegged to zero.

Take note: **Time information in the list is always relative time between points.**

2. Changing a values line

Changing a values line means that the temperature, humidity, or other value is changed. If you want to displace the point laterally, that is right to left, you must make a time change in the line list.
If you want to change a defined point via mouse, point the mouse at the new point (x-axis (time) is unchanged, y-axis (value) is displaced) and double click.



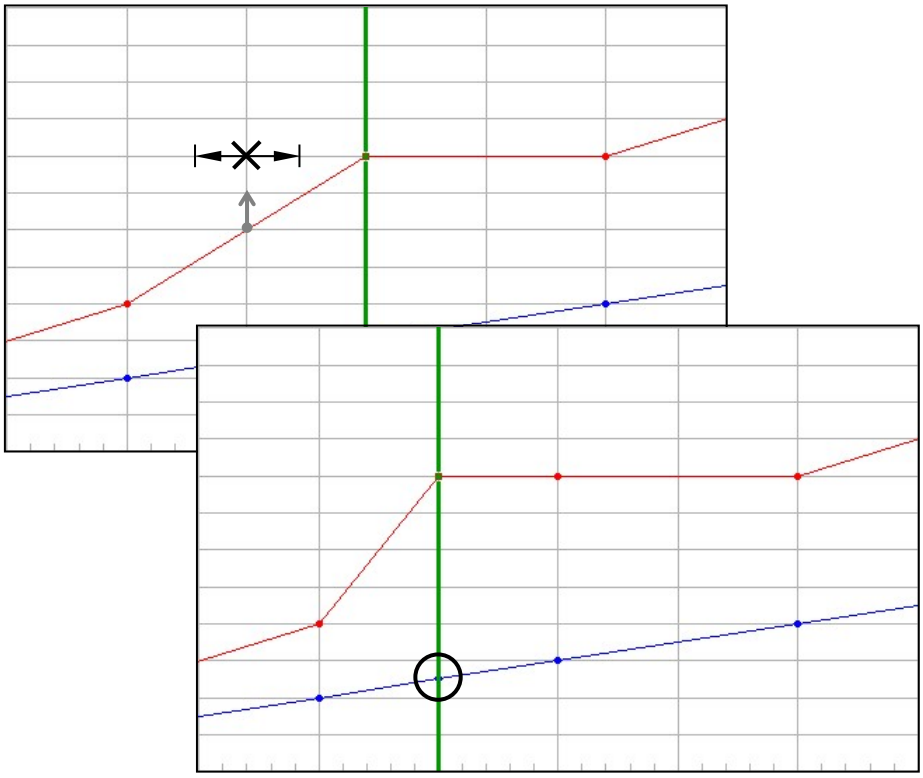
The point is displaced vertically on the graph and the connection is adapted.
The desired channel's value is changed in the selected line in the list.

In the chart, the mouse points to the ✕. The point should be displaced upward by ↑ °C.
You have the option of placing the mouse in the X direction (time) **approximately** on the point. Thanks to the raster/grid, you have an area of ⟷ around the point to "hit". If you leave the area to the left or right, you displace the point aside left or right. The area does not quite reach half of the distance to the next raster line in each case.

Take note: As when inserting a value line with the mouse, you must also select the right channel when changing the line, otherwise you will displace a channel that you didn't want to displace at all.

3. Retroactively insert a values line

Retroactively inserting a values line means that a channel‘s point is inserted between two other points (the values line in the list is inserted between two other values lines).



The point will be created at this place on the graph and the connection adapted.

The mouse points to the ✕ in the chart. A new point should be created there.
You have the option of placing the mouse in the X direction (time) **approximately** on the point. Thanks to the raster/grid, you have an area of ⟷ around the point to “hit”. If you leave the area toward the left or right, create a new point there if necessary. The area does not quite reach half of the distance to the next raster line in each case.

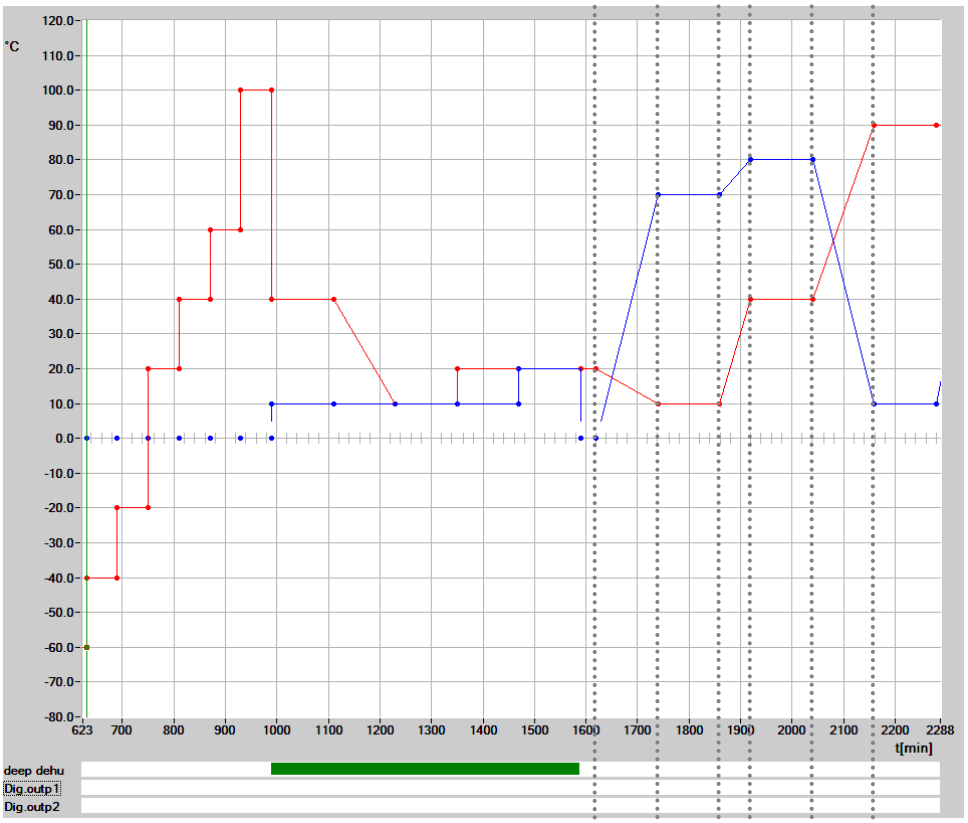
Take note: When you plot a new temperature point, a new humidity point is also created if necessary. Generally, all other displayed channels receive a new point (a complete values line in the list is created) so that nothing in the gradient of the other channels changes.

The new humidity point ○ was calculated and involves no changes in regard to the gradient of the former to the next humidity point. The point is, so to speak, simply inserted.

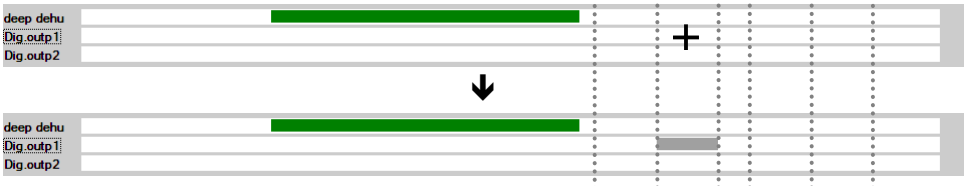
As when inserting a value line with the mouse, you must also select the right channel when changing the line, otherwise you will plot a new point for a channel that you didn’t want to create at all.

4. Edit digital channels

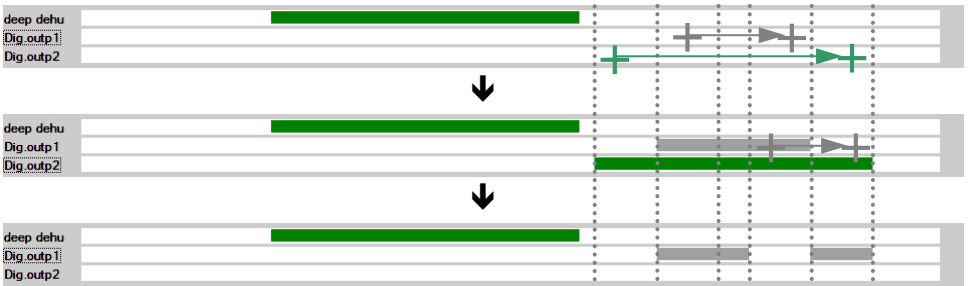
There is the possibility to edit the digital channels across multiple lines.
The channels Output1 and Output2 should be changed as follows:



1. **A double-click on a phase directly sets this digital channel**



2. **Mouse movement:**
   press and hold down the left mouse button at the start of the phase,
   release at the end of the desired range

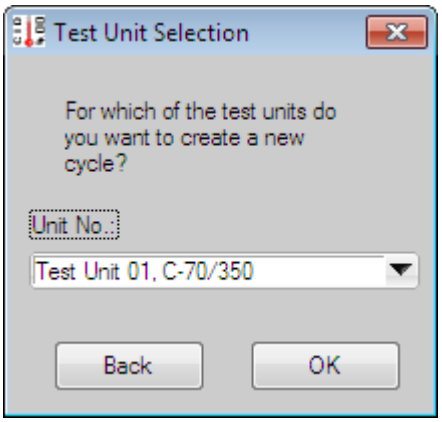


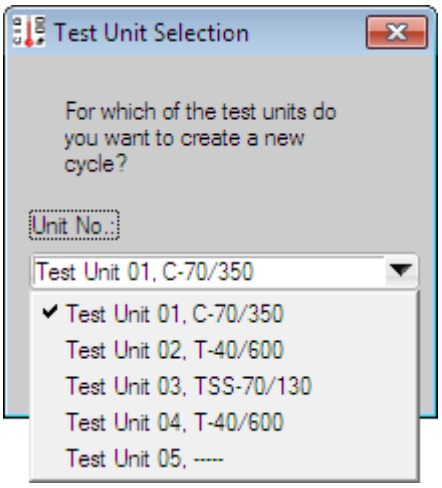
Take note: The values in the table are automatically adjusted and updated!

4.4.4 Functions

4.4.4.1 New test program

You can create a new test-cycle program with this function.
First, a selection of which test unit you want to create a new test cycle for appears.

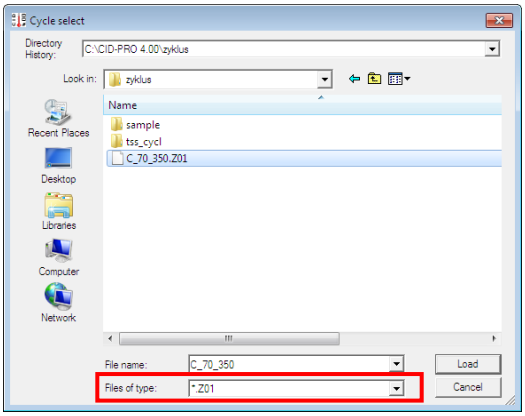



Test Unit Selection
For which of the test units do you want to create a new cycle?
Unit No.:
Test Unit 01, C-70/350
Test Unit 01, C-70/350
Test Unit 02, T-40/600
Test Unit 03, TSS-70/130
Test Unit 04, T-40/600
Test Unit 05, -----

After selecting a unit from the list and confirming with OK, the editor is re-built using the selected unit's configuration (digital and analogue channels and their assignments).
A confirmation prompt appears if the previous entry was not yet stored.

4.4.4.2 Open test program

You can open previously created test-cycle programs and load them into the editor. To do this, select the desired file from the list and click on load.



To open a file with another unit's configuration, change the file type and file name, for example from *.Z01 to *.Z02.
➔ Z01 → unit 1,
➔ Z02 → unit 2, etc.

4.4.4.3 Save (as) test program

You save your test program with this function.
A star * is appended to the program's name in the title line if you changed something in your program. That's the sign that your program needs to be saved, e.g. when exiting the editor, if that's what you want. You now have two options:

- **Save** **:** Save the test-cycle program under the same name you opened it with.
  For a new program ➔ save as

- **Save as** **:** Save the test-cycle program under a new name that you enter in the storage dialog.
  You can also overwrite a previous file, but Windows will ask you for confirmation.

A test program can be copied by saving it several times with other names and/or extensions. That way, it can also be made available to other test units.

Saved test programs are located in the "Zyklus" directory by default. This directory can, however, also be switched.

Take note: A test-cycle program created for a particular unit, like *.Z01 for unit 1, can be saved with a different extension for a different unit, like *.Z02 for unit 2. It should be observed in the process, that the digital channels' order as well as the analogue channels' area must agree so that the test program works for the new unit. An appropriate message appears in this case, because a few adjustments have to be carried out in the background:

The positions of the digital channels have changed!
The program is adapted to the actual test unit configuration.

You are saving the test unit 1 program … for another test unit.
Please confirm that number and position of analogue and digital channels are equivalent!"

4.4.4.4 Delete test program

You can select several files at once here to remove no longer needed test-cycle programs. Confirm your selection with Remove (All).
You ultimately delete all the files you selected after activating OK in the confirmation prompt.

Take note: **Handle deletion with care!!!**
Deleted files and data are irrevocably lost!!!

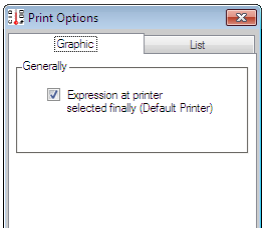
4.4.4.5 Printer/page setup and print …

You can print out the created test-cycle program.
In the process, you have the option to select the test program's graph (cf. point 2), the test program's list of values lines (cf. point 3), both graph and list together (cf. point 4), or the display (screenshot, cf. point 5). Besides, you can still make printer settings (cf. point 1):

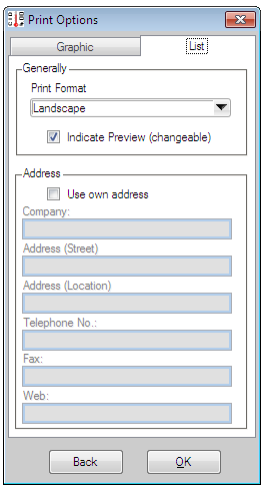
1. Printer/page setup

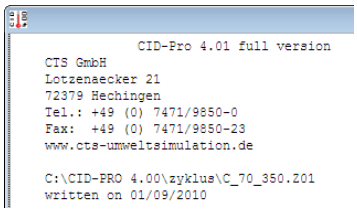
You have the following options after opening printer options:

- **Graph:** If you want to print out the graph, you will be queried for the printer and settings.
If you want to address your default printer with unchanged settings, set the option to circumvent querying the printer.



- **List:**
  - Print format:
    Set your format to **portrait**, **landscape,** or **printer settings**.
  - Show preview (editable):
    Do you want no preview before printing or do you want to show the list first in the preview?
    The preview is editable, i.e. it can be changed in the window.
  - Use your own address:
    The list contains a file header containing the CTS address.
    If you want to give your own address, check mark the box next to "Use own address" and complete the address data - **company**, **street**, **location**, **telephone, fax and internet**.
    You can also label the fields in accordance with user requirements.





2. Print graph

After selecting this function, you will be shown the printer selection - depending on options setting (cf. point 1 – Printer/page setup - graph) - the graph will be output on the selected printer or your default printer.

3. Print list

This function prints the values list out on the default printer. Depending on print options, you can control this print (cf. point 1 - Printer/page setup - graph).

4. Print both (graph and list)

Select this menu option if you want to print out the graph and values list together. The functions are the respective individual functions, executed one after the other, which can be individually configured in the settings (cf. point 1 - Printer/page setup - graph/list).

5. Print screen

The screen will be output for you as you see it on the monitor. This function prints a screenshot, except for the tool and menu bars.

4.4.4.6 Print as PDF...

The PDF print functions create PDF files with the same content as the standard print functions, cf. sec. 4.4.4.5 - Printer/page setup and print …,

- Point 2 - Print graph
- Point 3 - Print list and
- Point 5 - Print screen.

After you select these functions a dialogue is opened in which you can indicate the name and path under which the PDF file is to be saved. The path is the standard directory for the test programs. The name differs as follows:

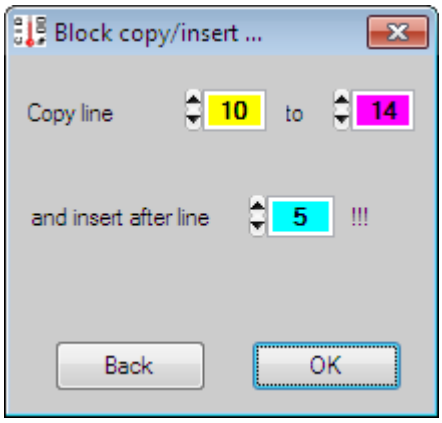
- **Print graph**
  The standard name is the test program opened followed by the unit number and the appendix 'Graphic', e.g.:
  Test program: NewProgram.z01
  PDF graph file: NewProgram_z01_Graphic.pdf
- **Print list**
  The standard name is the test program opened followed by the unit number and the appendix 'List', e.g.:
  Test program: NewProgram.z01
  PDF list file: NewProgram_z01_List.pdf
- **Print screen**
  The standard name is the test program opened followed by the unit number and the appendix 'Screen', e.g.:
  Test program: NewProgram.z01
  PDF screen file: NewProgram_z01_Screen.pdf

4.4.4.7 Copy/insert a block of lines / delete a block of lines

You can not only copy, cut and/or insert a values line, but also a complete block of lines.

1. ...copy and insert

The following window opens after clicking on the **Block copy and insert** function (F6 key):



	Time t	Temper in °C	Humidity in %rH	deep deh D1	Dig.outp D2
1	0	-75.0	0.0	0	0
2	90	-75.0	0.0	0	0
3	0	180.0	0.0	0	0
4	180	180.0	0.0	0	0
5	0	-75.0	0.0	0	0
6	180	-75.0	0.0	0	0
7	0	-70.0	0.0	0	0
8	60	-70.0	0.0	0	0
9	0	-75.0	0.0	0	0
10	60	-75.0	0.0	0	0
11	0	-60.0	0.0	0	0
12	60	-60.0	0.0	0	0
13	0	-40.0	0.0	0	0
14	60	-40.0	0.0	0	0
15	0	-20.0	0.0	0	0
16	60	-20.0	0.0	0	0
17	0	20.0	0.0	0	0
18	60	20.0	0.0	0	0
19	0	40.0	0.0	0	0
20	60	40.0	0.0	0	0
21	0	60.0	0.0	0	0
22	60	60.0	0.0	0	0

In the process, the lines to be copied (from yellow through pink) and the line **after** which the block is to be pasted (light blue) are colour coded. The list is adjusted and updated if information is changed:

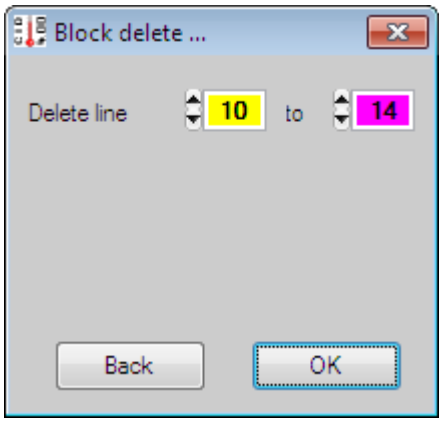
5 any line can be selected.

10 always < as 14

Take note: The copied block is inserting **after** the selected line!!!

2. ...delete

The following window opens after clicking on the **Block delete** function (F7 key):



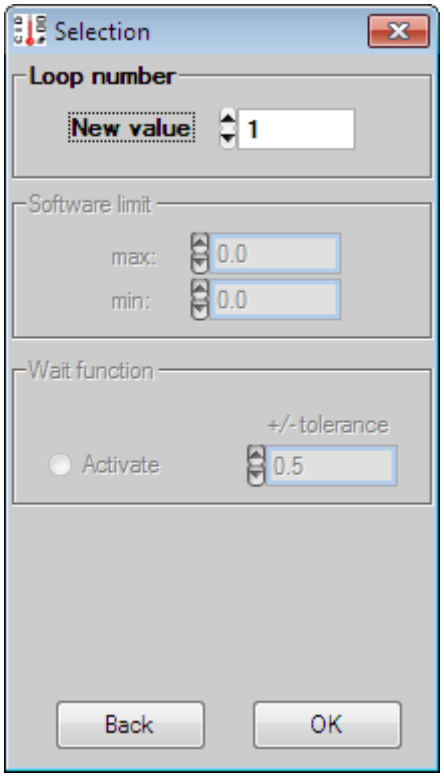
	Time t	Temper in °C	Humidity in %rH	deep deh D1	Dig.outp D2
1	0	-75.0	0.0	0	0
2	90	-75.0	0.0	0	0
3	0	180.0	0.0	0	0
4	180	180.0	0.0	0	0
5	0	-75.0	0.0	0	0
6	180	-75.0	0.0	0	0
7	0	-70.0	0.0	0	0
8	60	-70.0	0.0	0	0
9	0	-75.0	0.0	0	0
10	60	-75.0	0.0	0	0
11	0	-60.0	0.0	0	0
12	60	-60.0	0.0	0	0
13	0	-40.0	0.0	0	0
14	60	-40.0	0.0	0	0
15	0	-20.0	0.0	0	0
16	60	-20.0	0.0	0	0
17	0	20.0	0.0	0	0
18	60	20.0	0.0	0	0
19	0	40.0	0.0	0	0
20	60	40.0	0.0	0	0
21	0	60.0	0.0	0	0
22	60	60.0	0.0	0	0

In the process, the lines to be deleted (from yellow through pink) are colour coded. The list is adjusted and updated if information is changed:

10 always < as 14

4.4.4.8 Loop (loop beginning and end)

You can repeat certain cyclic processes with a loop. A loop beginning and an end are needed for this. Moreover, the number of repetitions must be defined at the beginning of the loop.



- **Loop beginning:**

  To program a loop, activate it with a left mouse click on the line **after** which the loop is to begin. Finally, press the “loop beginning ” function in the tool bar or the F2 key. The display in the table is as follows:

1 x	SA	SA	S	S

  The 1x in the time column indicates that, at the moment, the loop will iterate once. You see a vertical pink line on the graph as a check indicating the beginning of the loop.

  Double clicking on the loop beginning line opens the adjacent window for entry of the loop number. This is accepted with OK.

- **Loop end**

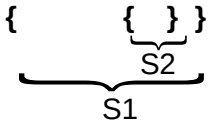
  Activate the line **after** which the loop should end with a left mouse click. Finally, press the “loop end ” function in the tool bar or the F3 key. The display in the table is as follows:

	SE	SE	S	S

  You see a vertical purple line on the graph as a check indicating the end of the loop.

Take note: Please observe that for each loop beginning a loop end must be programmed. CID-Pro 4.02 checks the number of loop beginnings and endings when you want to save the program. An error message appears if this check should turn up different numbers.

The loops can also nested:

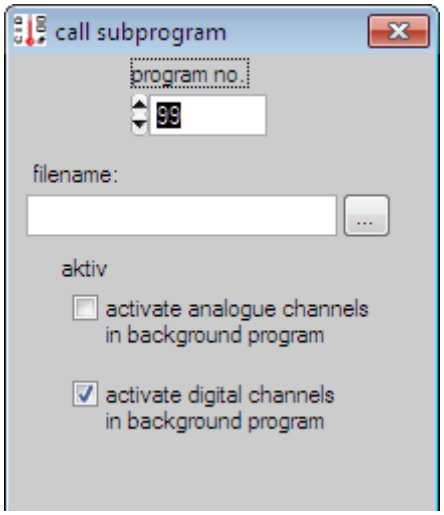


Maximum number of different loops: 20

Maximum number of the same loop: 9999

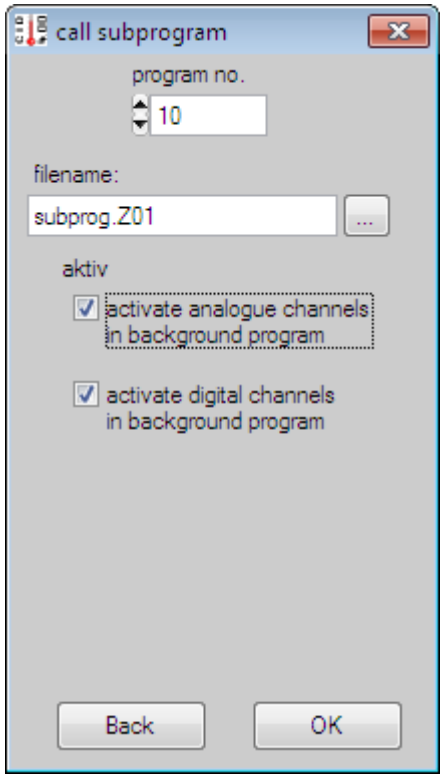
4.4.4.9 Call Subprogram

If subprograms are to be used, the subprogram must always be compiled first and then the main program.



Using the left mouse button, activate the line **after** which the call is to be inserted to insert a subprogram call. Finally, press the “Subprogram ” function in the tool bar or the F4 key. A window appears for the subprogram call.

You can select the subprogram's filename in this menu. Moreover, you assign the subprogram a location in the controller with the program number choice. The subprogram is transferred to this program location when the program is sent. The main program and every subprogram called must receive its own program number. A main program can run only one subprogram at a time.
If a new subprogram needs to be started while the old one is still running, the old subprogram is terminated. Likewise, all subprograms are terminated when the main program terminates.



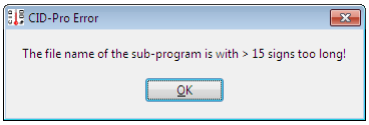
The status display in automatic mode always relates to the main program. That means the test unit’s set values don’t agree with the displayed values if the analogue channels are active in the subprogram.

The following call record is displayed following the marked line after confirmation with OK.

You see a vertical turquoise line on the graph as a check indicating program invocation.

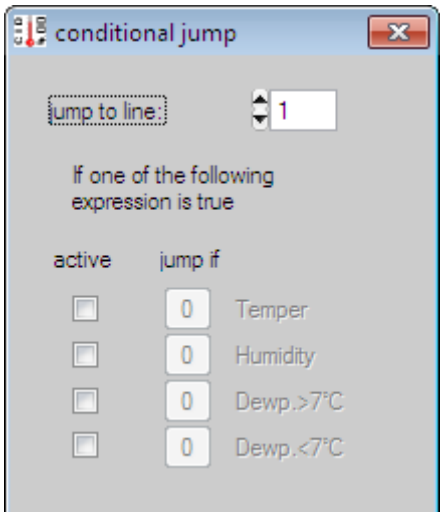
Subprogram application examples are the occasional rapid switching of digital channels in a long main program. The subprogram can store a constantly recurring digital channel switching pattern. The desired set value progression is now programmed in the main program. The subprogram is inserted at the place where the digital channels are to be switched and only the digital channels are switched active in the subprogram.
If the digital channels are active in this subprogram, they remain in the state they had on the subprogram's last line until a new line is reached in the main program. So reset no longer needed digital channels at the end of the subprogram.

Take note: **If a program is loaded with a name that is too long (max. length: 16 characters including file extension) an error message is displayed:**



4.4.4.10 Conditional jump

Conditional jumps are program jumps resulting from digital input states. The jumping function allows the test program to terminate or adapt in response to external events.

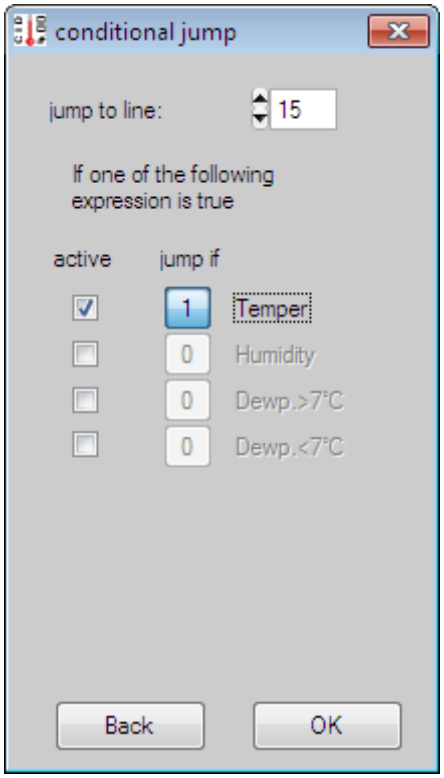


To insert a conditional jump, activate the line **after** which the jumping function is to be inserted with the left mouse button. Finally, press the "Jump " function in the tool bar or the F5 key. A window appears for the conditional jump. The following line is temporarily displayed in the table:

xxxx	xxxx	xxxx	x	x

The line to which the jumping function is to jump if the conditions are fulfilled is given next (**jump to line**:). Select the desired line here. As an aid, the selected line in the table is displayed in blue and black.

xxxx	xxxx	xxxx	x	x
60	-60.0	0.0	0	0
0	-40.0	0.0	0	0
60	-40.0	0.0	0	0
0	-20.0	0.0	0	0



You can select one or more channels as **jumping conditions**. If several channels are activated, they are joined with a logical **OR**. Moreover, the state of the respective channel can be defined.

To activate the temperature, for example, check mark the active box next to the channel on the left. This activates the state and it is no longer greyed out.
You define the state by setting or resetting the button. The 0 or 1 state is displayed.

The following jump record is displayed following the marked line after confirmation with OK.

Jump	Line 15		J	J

You see a vertical dark green line on the graph as a check indicating conditional jump.

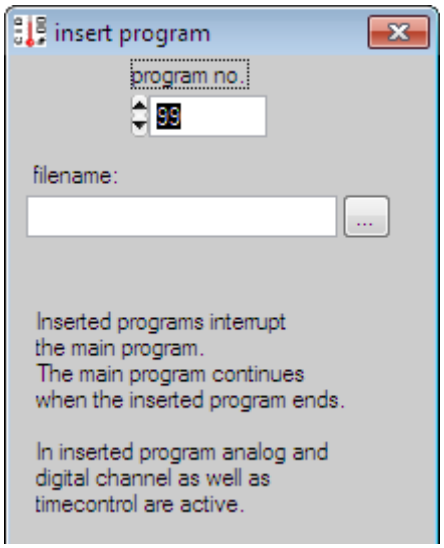
Take note: The jump function is active during the entire run time of the line following the jump function. This way, not just a single query is possible, but a sort of interrupt operation.
The displayed loop count and level are no longer correct if the jumping function is used within a loop and the jumping target is outside of the loop.

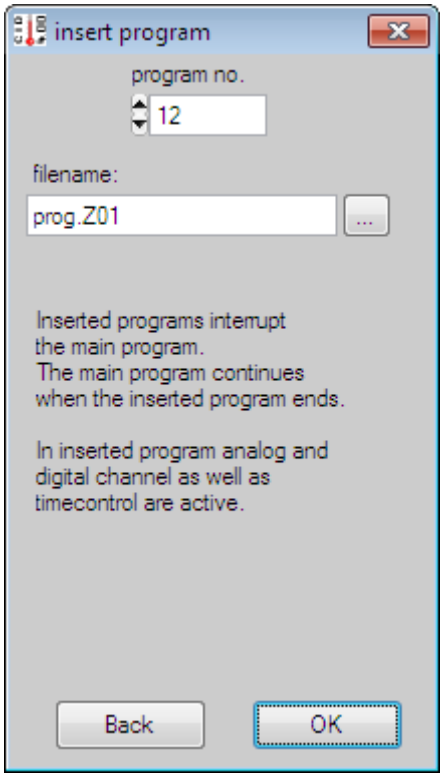
4.4.4.11 Insert Program

If a module program should be inserted, the module program must always be generated first and, subsequently, the main program.

To enter a module program, use the left mouse button to activate the line which should be inserted after the insert program. Click on the "insert program " button or press F10 to display the window to insert a module program.

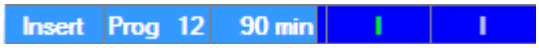
You can use this menu to select the file name of the module program.
In addition, when selecting the program number, the module program is allocated a place in the controller. When the main program is sent, the module program is transferred to this place in the program. The main program and each module program used must be assigned a dedicated program number. Only one module program can ever run in a main program.





The status display in automatic mode displays both the main program and the module program.

By confirming OK the following insert line is displayed after the marked line:

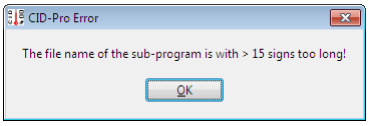


There is a vertical light green control line in the graph, this identifies the module program.

The third column (90 min) are the total run time of the inserted program.

Take note: **Inserted module programs interrupt the main program. The main program continues when the inserted module program ends. In inserted module program analogue and digital channels as well as time control are active.**

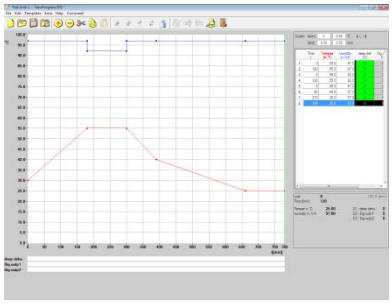
If a program is loaded with a name that is too long (max. length: 16 characters including file extension) an error message is displayed:



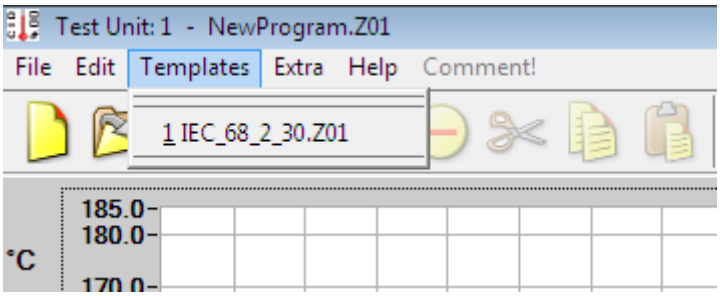
4.4.4.12 Templates

You have the option to create templates if you repeatedly access a certain program or test cycle. You open templates via the menu and save them, possibly with small adaptations and under a different name. This way you can separately save, call, and adapt ever-recurring procedures. These templates are comparable to Microsoft ® Word document templates (*.dot), which establish a document's basic structure.

1. Create a test-cycle program



2. Save it in the ***CID-installation-path*\zyklus\sample** directory.
   e.g.: **C:\CID-PRO 4.00\zyklus\sample\IEC_68_2_30.Z01**
   (You can change or adjust this path in the configuration, general paths register).
3. The next time the editor is opened, thereby creating a new program, this program's file name appears as an entry in the "Templates" menu.



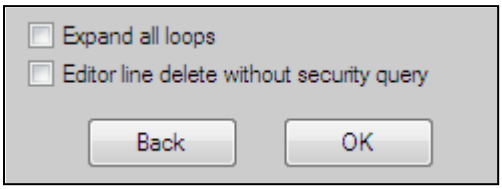
4. A test program opens in the editor when you click on this template. Confirmation prompts concerning changes to an already edited, new program are displayed first.
5. Modify this open program to meet your current requirements.
6. Save the modified templates in the ***CID-installation-path*\zyklus** directory with "Save as …" under a new name characteristic of this application or test. The "Save as …" dialog shows the Zyklus directory as the default path.
   e.g.: **C:\CID-PRO 4.00\zyklus\TestSensorAZ01**

   Take note: The "Save" function without a path request - so saving into the already open file - is only executed with an additional confirmation prompt, to avoid overwriting the template by mistake.
7. If you want to change the template in the ***CID-installation-path*\zyklus\sample** directory, open the template as previously described, change it and use the "Save as …" function to store it with the same name in the sample directory. An additional confirmation prompt serves to prevent important templates from being accidentally overwritten.

   Take note: Unit X **templates** are only **visible** in the editor when unit X was selected before opening the editor, or when a new program is selected.

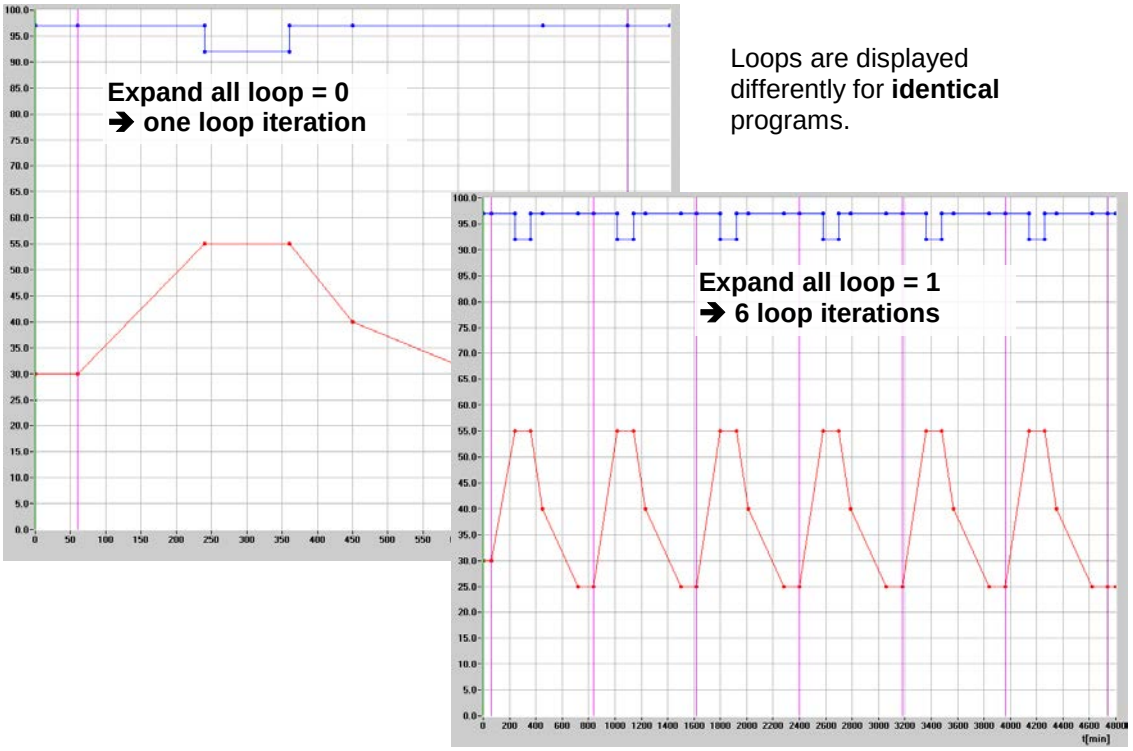
4.4.4.13 Editor options

- **General**



Expand all loops:

If this option is set and loops are used in the generated test program, the loops are displayed one after another corresponding to the stated number.
This way, the correct nominal value progression can be monitored, especially within the scope of the jump, to the beginning of the loop and after loop completion.
If this option is not set, then the graph shows only one iteration through the loop.

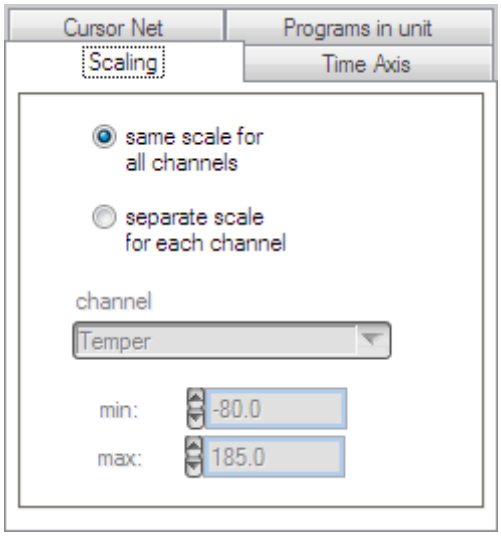


Loops are displayed differently for **identical** programs.

Editor line delete without security query:

If you have created a program and perhaps need to delete many lines, you have to deal with the confirmation prompt at every line.
If you are sure that you haven't made any mistakes, or it is not serious if you delete a line by mistake, set this option (delete without security query) and you can delete the line without the query.

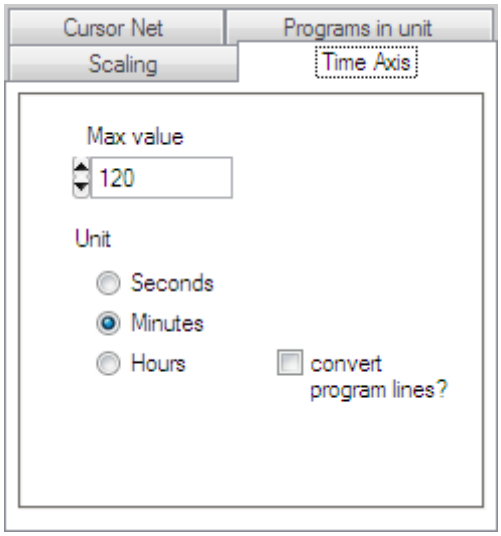
- **Scaling**



As y-axis scaling, you can select whether the same value range applies to all channels. The scale is always the same in this case. It begins with the smallest and extends to the greatest value of all the analogue channels.

In the second variation, each channel receives its own range. If the active channel is switched, the scale changes accordingly and the area presented on the graph switches. This way, you have the option to set the area for each channel resulting in maximum resolution.

- **Time Axis**



Enter the new time axis here. The **maximum value** for one thing - how “wide” in minutes, for example, should the time axis be - and the **units** - seconds, minutes or hours.

If you have set the “**convert program lines?**” option active and you change the unit relative to your previous setting, the editor tries to convert the old time values into the new unit, from minutes to hours, for example, when whole hours (every 60 minutes) were entered on the line in question. If conversion is possible, you can perform it after the confirmation prompt.
Conversion from hours to minutes is always possible.

If the “**convert program lines?**” option is not set active, only the units are changed. That means that 5 minutes just become 5 hours.

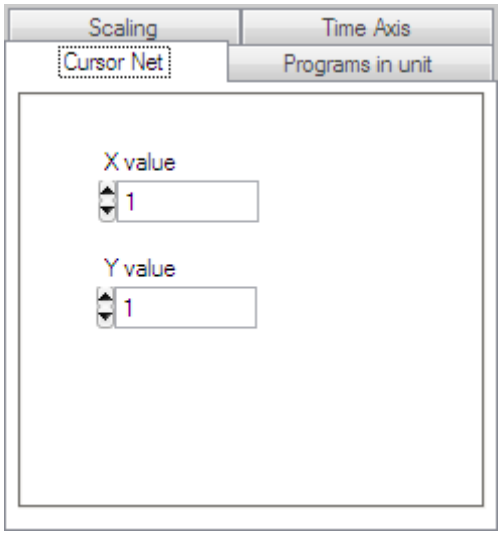
Possible conversions:

Conversions	***convert program lines?***	
	yes	***no***
Seconds to hours	**conversion check**	✓
Seconds to minutes	**conversion check**	✓
Minutes to hours	**conversion check**	✓
Minutes to seconds	✓	✓
Hours to minutes	✓	✓
Hours to seconds	✓	✓

No line with values under five seconds should be used for the seconds time basis. Correct synchronization is not guaranteed otherwise due to the controller's cycle time.

- **Cursor Net**

  The granularity with which the cursor jumps for graphical input can be defined in the grid. This makes it easier to hit the desired points.



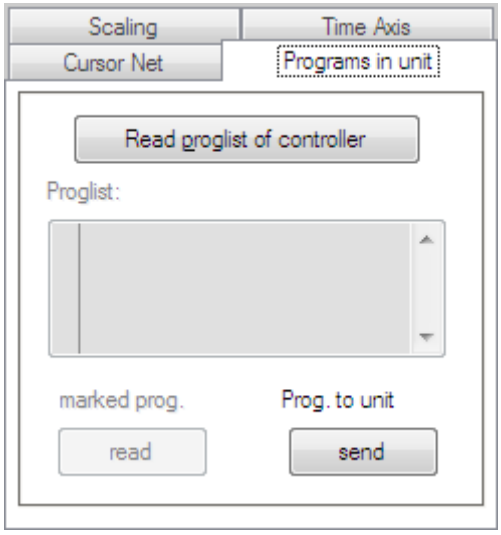
- **Programs in unit**

  The potential exists here to save programs already in the controller onto the computer or send individual programs directed to the controller.

  Programs stored on the selected unit are listed with **Read proglist of contr.**

  The marked program can be **uploaded** and stored on the PC. The file path and program name are still queried.

  Using **send**, a program can be selected on the PC and ultimately transmitted to the controller.

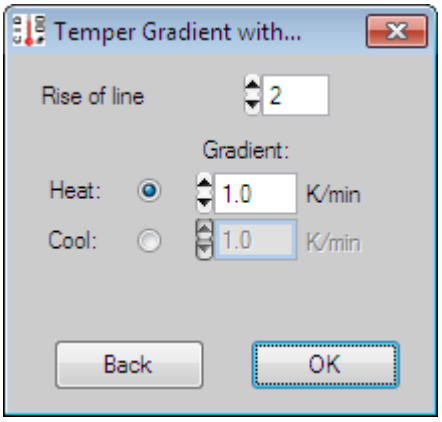


  This option is only possible in relation to controller's software version (starting with V1-62).

4.4.4.14 Set Gradient

The extra option **Gradient …** helps you further if you want to create programs with exact gradients from point to point.

1. ...with (valued calculation)



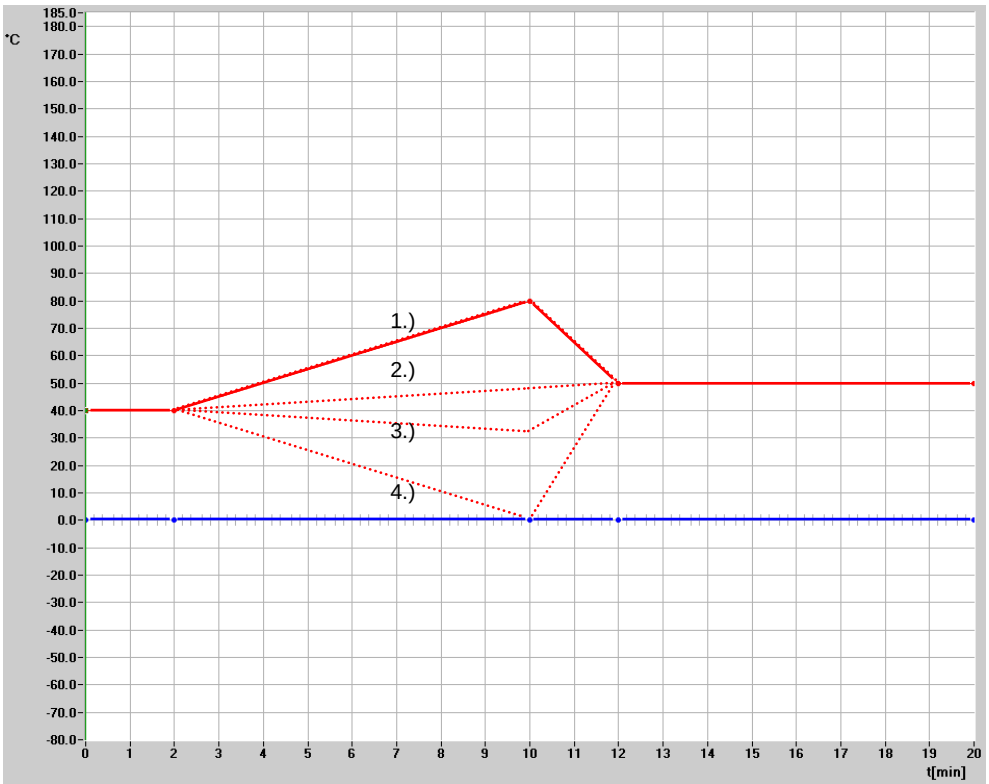
You determine the **y coordinate** of the next point (e.g. temperature value) with the specified duration and desired gradient using value calculation.
You mark the line in the value list that you want to serve as the starting point for the defined gradient. Then you activate the **Gradient with …** function in the Extra menu or the F8 key.
You can enter the settings for the defined gradient in the following window:

- **Rise of line:** Gradient starting point
- **Heat:** **positive** gradient in K/min (> 0)
- **Cool:** **negative** gradient in K/min (< 0)

General calculation: $$Gradient = m = \frac{y}{x} = \frac{Temperature}{Time}$$

Example with start line: 2 (time 2 min and temperature 40°C) ➔ next point (time 8 min):

1.) Gradient: heating 5 K/min ➔ Point 3: temperature = 80 °C (= 40 °C + 5*8 °C)
2.) Gradient: heating 1 K/min ➔ Point 3: temperature = 48 °C (= 40 °C + 1*8 °C)
3.) Gradient: cooling 1 K/min ➔ Point 3: temperature = 32 °C (= 40 °C + 1*8 °C)
4.) Gradient: cooling 5 K/min ➔ Point 3: temperature = 0 °C (= 40 °C - 5*8 °C)



Take note:

The controller tries to execute the specified gradient while the program runs.
Please check your given unit's max. rate of change. If the gradient in the program exceeds your test unit's max. rate of change, it won't be achieved.

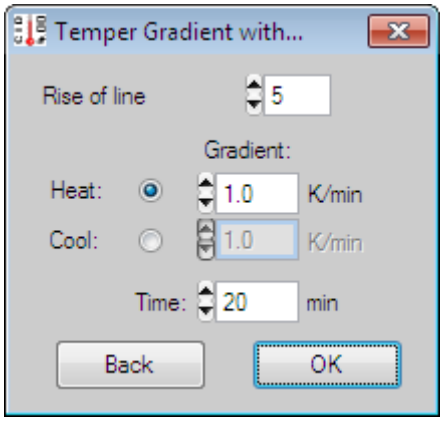
Only two value lines may be edited. If a line is not a value line, e.g. the beginning of a loop, the function will be cancelled with an error message.
If the value is calculating outside the permissible Y range (e.g. temperature min-max values), the function will be cancelled.
The time between two points must not be equal to zero. If you have programmed a jump, the function will be cancelled with an error message.

This approach also applies to the retrospective editing of the test program. In other words, you have defined two points (e.g. temperature value and time) which you now wish to adapt.

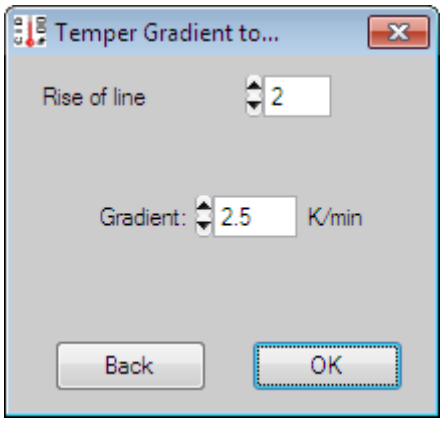
If you select the last line as the start line, you will also require additional information about how long the ramp should last:

The time field takes the temporal distance over into the calculation.

The Y coordinate (e.g. temperature) is calculated with the help of the gradient and the temporal distance, and this point is then created in the editor.



2. ...to (time calculation)



You use time calculation to determine the **x coordinate** of the next point (temporal duration) with specified y coordinate of the next point (e.g. temperature value) and the desired gradient.
You mark the line in the value list that you want to serve as the starting point for the defined gradient. Then you activate the **Gradient to …** function in the Extra menu or the F9 key.
You can enter the settings for the defined gradient in the following window:

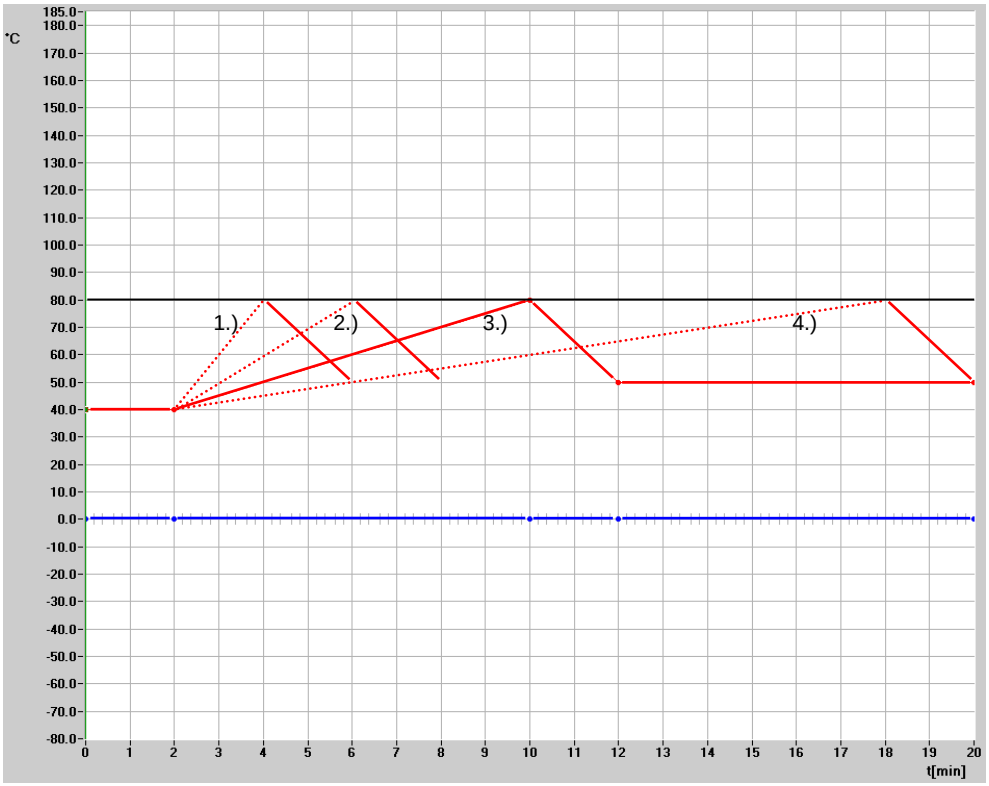
- **Rise of line:** Gradient starting point
- **Gradient:** Gradient in K/min
  (Heating or cooling is provided by entering the y coordinate (e.g. temperature)).

General calculation:

$$Gradient = m = \frac{y}{x} = \frac{Temperature}{Time}$$

Example with start line: 2 (time 2 min and temperature 40 °C) ➔
Next point line: 3 (temperature 50 °C):

1.) Gradient: 20 K/min ➔ Point 3: time = 2 min (= 40 °C / 20 K/min)
2.) Gradient: 10 K/min ➔ Point 3: time = 4 min (= 40 °C / 10 K/min)
3.) Gradient: 5 K/min ➔ Point 3: time = 8 min (= 40 °C / 5 K/min)
4.) Gradient: 2.5 K/min ➔ Point 3: time = 16 min (= 40 °C / 2.5 K/min)



Take note:

The controller tries to execute the specified gradient while the program runs.
Please check your given unit's max. rate of change. If the gradient in the program exceeds your test unit's max. rate of change, it won't be achieved.

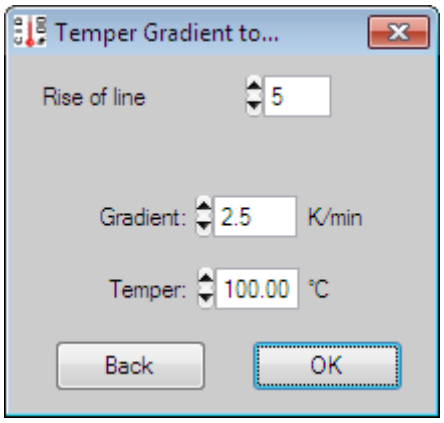
Only two value lines may be edited. If a line is not a value line, e.g. the beginning of a loop, the function will be cancelled with an error message.
The values (e.g. temperature) between two points must not be equal to zero. If you have programmed a horizontal straight, the function will be cancelled with an error message.

This approach also applies to the retrospective editing of the test program. In other words, you have defined two points (e.g. temperature value and time) which you now wish to adapt.

If you select the last line as the start line, you will also require additional information about at which value (e.g. temperature) the ramp should end:

The value field (e.g. temperature) takes the Y coordinate over into the calculation.

The temporal distance is calculated with the help of the gradient and the value (e.g. temperature) entered, and this point is then created in the editor.



4.4.4.15 Save file in data pool

The data pool denotes a virtual area in which globally valid test programs are saved. In other words, you create a test program that you want to run on several identical test units. This virtual area distinguishes itself from the normal program by its extension. Data pool programs end with *.Pxx, for example, *P01. Normal programs end *.Zxx, for example, *Z01.
These data pool programs are manageable like normal programs. When opening the data pool program, you must be sure to click on the data type: all files (*.*), then select and open the right file.

The big advantage of these data pool programs consists of the fact that you can select not just normal programs during automatic start-up, but also a data pool program that originated from a different test unit. When loading a data pool program, the program's configuration is compared with that of the test unit on which the program is loaded. If the channels agree, the data pool program can be loaded. If the configurations fail to agree on the most important properties, transfer is prevented.
Please compare sec. 4.6 - Starting test programs (automatic), page 111 concerning the exact procedure for the automatic operation of a data-pool program.

Take note: It hardly pays to use this data pool program technique if you have many different test units. This also applies to a few units with little in common because it really must involve identical configurations.
If you have several identical test units, i.e. units with identical configurations, then the data pool function makes sense because you save time not having to repeatedly write a new, but identical test program for a different unit.
Besides, the probability of error decreases when you only have to maintain one program in contrast to five, ten, or more identical programs.

4.4.4.16 Save file as library

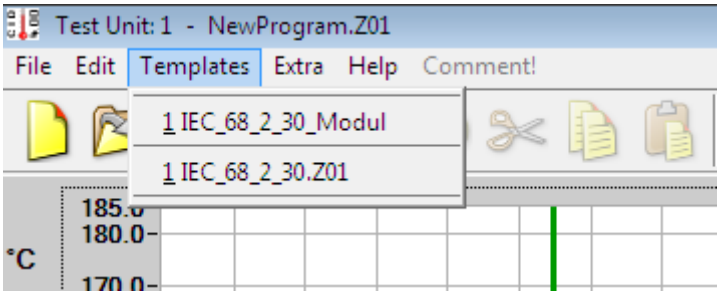
Libraries differ from templates (cf. sec. 4.4.4.12 - Templates, page 78) in the following respects:

- **Display:** libraries are displayed for **all test units**.
- **Storage:** libraries can only be stored in the **sample directory** ***CID-installation-path*\zyklus\sample**.

1. Create a test-cycle program
2. Save the library with the **Extras/Save file as library.**
   The path and the file extension are **not changeable** here.
   Path: ***CID-installation-path*\zyklus\sample**
   (You can change or adjust this path in the configuration, general paths register).
   Extension: **.clib** (**C**TS **Lib**rary)

   e.g.: **C:\CID-PRO 4.00\zyklus\sample\IEC_68_2_30_Modul.clib**

3. The next time the editor is opened, thereby creating a new program, this program appears as an entry in the “Templates” menu. The “.clib” is missing and is not shown because this entry is unit independent and should consequently be shown for every configuration and unit.



4. The test-cycle editor opens when you click on the entry. Confirmation prompts concerning changes to an already edited, new program are displayed first. The program is now opened as
C:\CID-PRO 4.00\zyklus\ IEC_68_2_30_Modul.Z01 (selected with test unit 1)
.
5. Modify this open program to meet your current requirements.

Take note: If you store a program in a different unit’s library, the channels will be adjusted following a confirmation prompt.

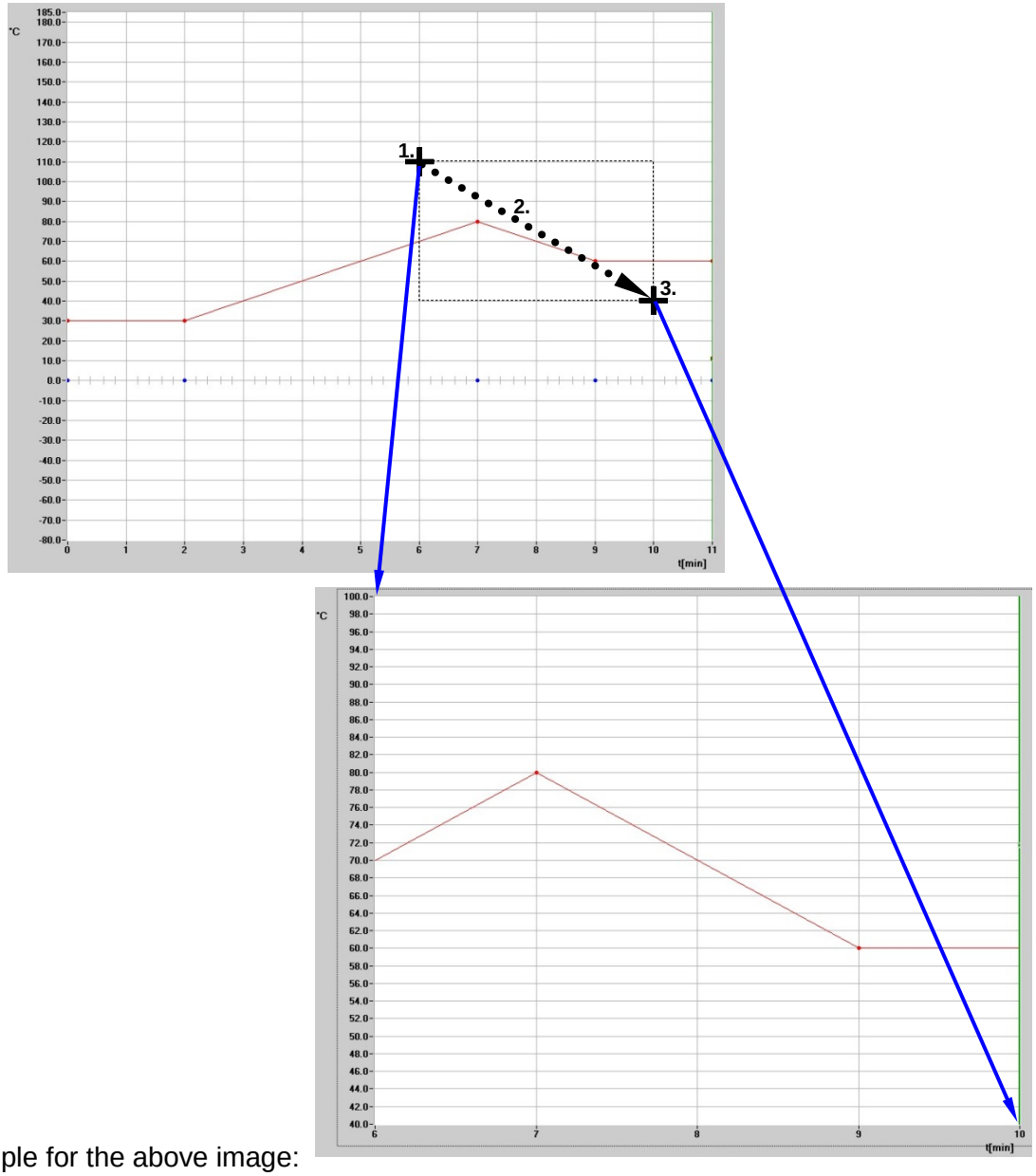
4.4.4.17 Editor comments

An input window opens in which a one to 250 character long commentary about the current test-cycle program can be entered. You select OK to save the entries in the input window or Cancel to close the window without accepting the changes.
Comments about a currently running program can be called up in the status overview in the program automatic (cf. sec. 4.1.6 - Program automatic, page 26).
Moreover, the comments are also output when printing the test program - only in the list.

4.4.4.18 Editor zoom functions

The zoom function enables you to enlarge an area. You can repeat this procedure up to 19 times. In other words you can zoom 20 times. Proceed as follows to enlarge the desired area:

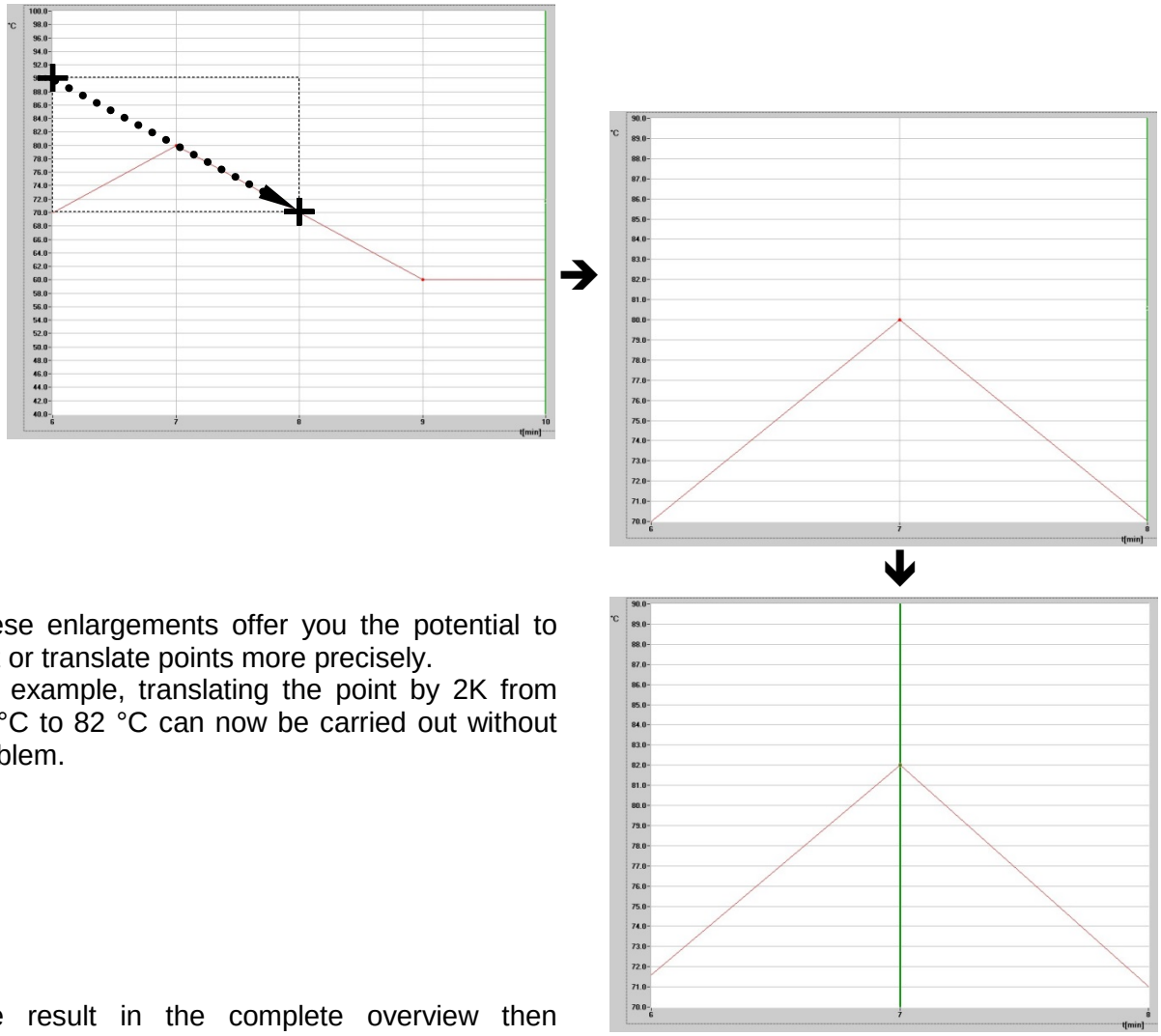
1. Right click the desired area's upper left corner and hold the mouse button down.
2. Now drag the mouse with the depressed right button to the desired area's lower right corner.
3. The zoom function is applied after releasing the right mouse button and the selected area is enlarged.



Example for the above image:

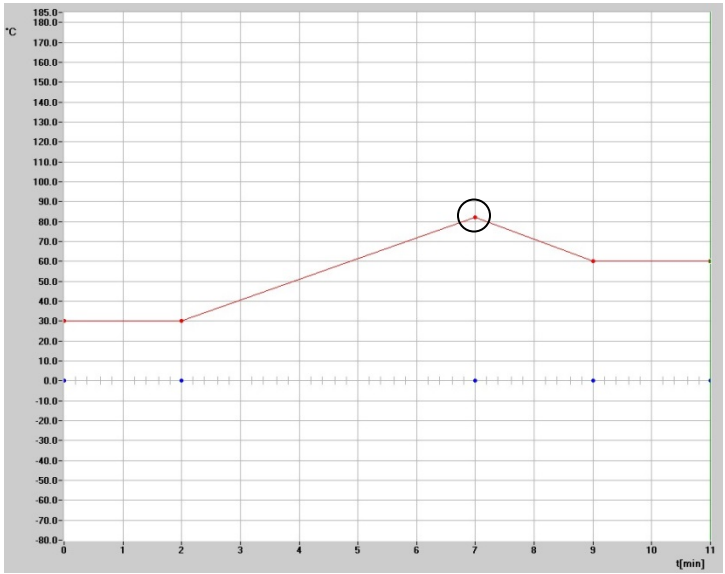
1. Click and hold time = 6 min and temperature = 110 °C coordinate with the right mouse button.
2. Drag the mouse with depressed right mouse button to the time = 10 min and temperature = 40 °C coordinate.
3. Release the right mouse button.

Take note: The point connectors' visible gradients can be displayed differently after zooming if the relation of the x to the y-axis no longer agrees. Checking the gradient by calculating the y segment length over x segment length shows that the gradient is in fact unchanged.
You can repeat this zoom process up to 19 times:



These enlargements offer you the potential to plot or translate points more precisely.
For example, translating the point by 2K from 80 °C to 82 °C can now be carried out without problem.

The result in the complete overview then appears as follows:

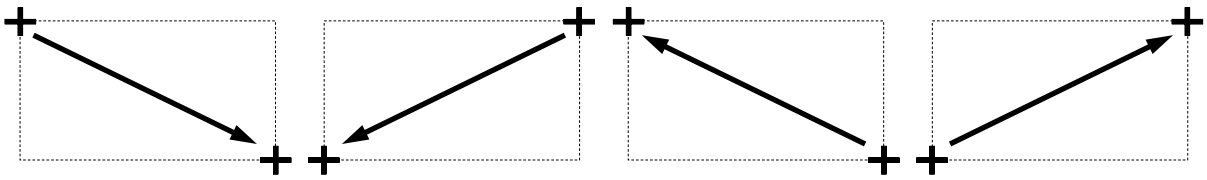


- **Full screen:** Return from any arbitrary zoom level to the overall view / full screen.

- **Zoom out:** Zoom out a level (shrink)

- **Zoom:** Zoom in a level (enlarge) assuming you've already defined this level. If not, then the function or button is greyed out. That way, you can always identify how far you have already zoomed.

Take note: You can only zoom with precision on **one object**. That means, for example, on 1 minute and 1 °C exactly.
The method of dragging the desired area with the mouse was explained in this instruction manual based on the upper left to lower right corner.
You can carry out this function in an **arbitrary direction**.

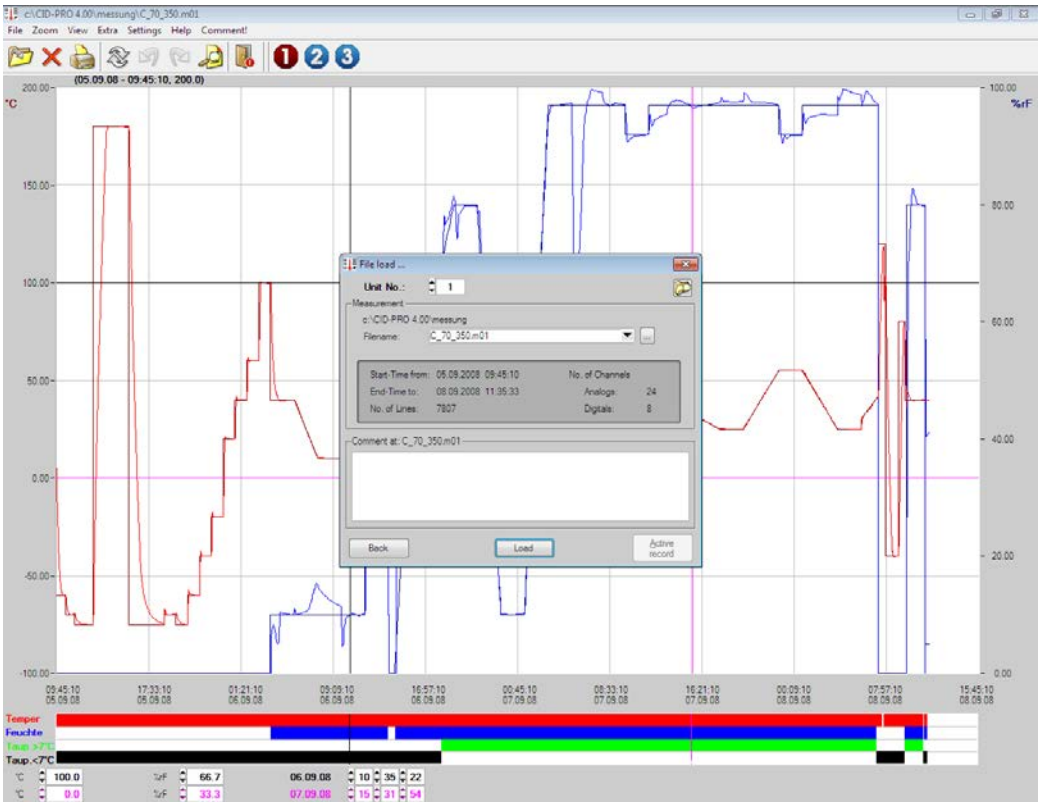


The zoom area is depicted during zooming by a **dashed rectangle**. This enables the area to be defined better.

4.5 Graphical measurement-data analysis

4.5.1 Preface

In the graphical view, you have the option to graphically present and analyze acquired measurements.
When starting graphical measurement data analysis, a pop-up window for loading a measurement or the active record opens:



Take note: **At the first start of the graphical measurement-data analysis, default settings are defined!**

Failing to see a graph after loading a measurement may be caused by the following:

- The selected file is empty or new (contains no data yet)
- No legend is shown, so most probably no channels were selected in the measurement data record configuration or the settings were not saved as default so that they were lost when the measurement file was requested.

Sec. 4.5.3.9 - Options (Graphical measurement-data analysis) page 100 describes the exact approach to channel selection in more detail!

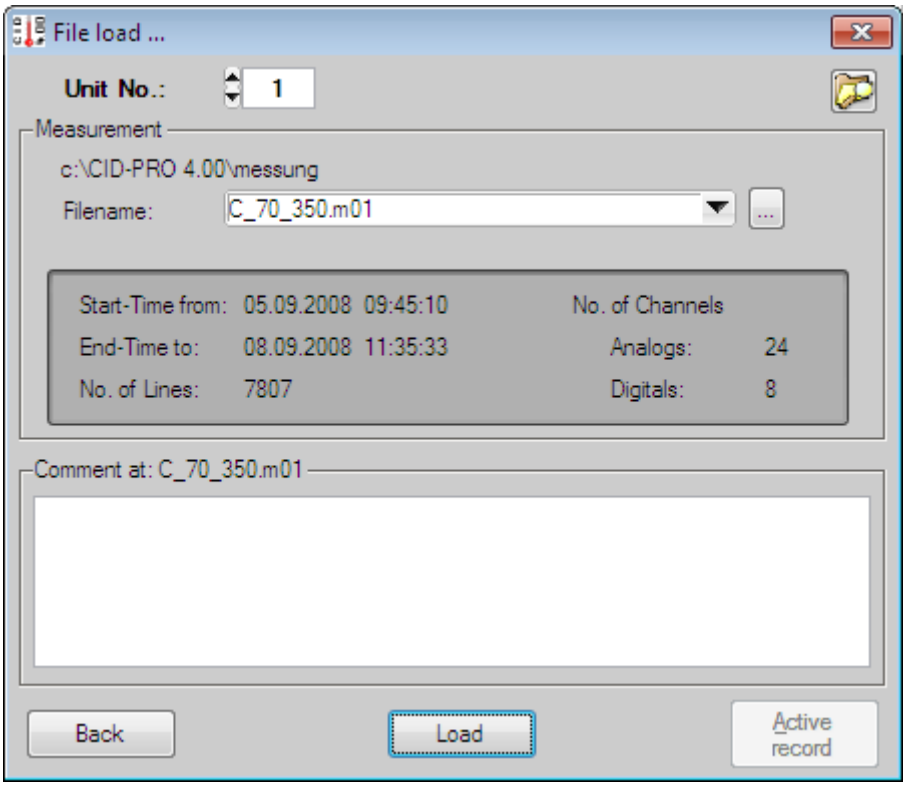
4.5.2 Buttons

Menus	*Symbol*	*Submenus*	*Also in toolbar*	*Key combi-nation*	*Reference*
File		**Open...**	**X**	**Ctrl+O**	Open and load measurement cf. sec 4.5.3.1, p. 93
		Delete	**X**	**Ctrl+D**	Delete measurement cf. sec 4.5.3.3, p. 95
		Print	**X**	**Ctrl+P**	Print measurement cf. sec 4.5.3.4, p. 96
		Print as PDF	**X**	**Ctrl+F**	Print measurement as PDF cf. sec 4.5.3.5, p. 96
	---	*Files last opened*			*Open and load measurement (4.5.3.1)*
		Exit	**X**	**Ctrl+E**	Exit the graphical measurement-data analysis
Zoom		**Complete Frame/Restore**	**X**	**Ctrl+R**	Zoom functions (graphical measurement-data analysis) cf. sec 4.5.3.6, p. 97
		Zoom Out	**X**	**Ctrl+U**	
		Zoom	**X**	**Ctrl+Z**	
		Zoom to cursor positions	**X**	**Ctrl+S**	
View		**Display**		**Ctrl+I**	Display cf. sec 4.5.3.7, p. 99
		Analysis		**Ctrl+A**	Analysis cf. sec 4.5.3.8, p. 99
Extra		**Options**	**X**	**Ctrl+T**	Options (graphical measurement-data analysis) cf. sec 4.5.3.9, p. 100
		Convert to Excel - Program		**Ctrl+X**	Excel conversion program cf. sec 4.5.3.10, p. 103
		Display Measure-ment Value **completely**			Display Measurement Values cf. sec 4.5.3.11, p. 106
		cursor position			
		Copy to Clipboard		**Ctrl+C**	Copy to clipboard cf. sec 4.5.3.12, p. 106
		Join Measurement Files		**Ctrl+M**	Merge measurement files cf. sec 4.5.3.13, p. 107
		Cut current Measurement File (Cursor)			Cut current Measurement File (Cursor) cf. sec 4.5.3.14, p. 107
Settings		**Setting 1**	**X**		Settings cf. sec 4.5.3.15, p. 108
		Setting 2	**X**		
		Setting 3	**X**		
		Setting 4	**X**		
		Setting 5	**X**		
		Setting 6	**X**		
		Setting 7	**X**		
		Setting 8	**X**		
		Setting 9	**X**		
		Setting 10	**X**		
		New Setting			
		Delete Setting			
Help		**Help**		**F1**	
Comment!					Comment (graphical measurement-data analysis) cf. sec 4.5.3.16, p. 110

4.5.3 Graphical measurement-data analysis functions

4.5.3.1 Open and load measurement

This function opens a window with which any CID-PRO measurement can be loaded.



In the central area are data describing in detail the measurement currently selected in the **Filename** field.

- Start/end time
- Number of analogue/digital channels
- Number of lines, i.e. measurement values
- Measurement data comments

Unit No: defined which unit measurements should be loaded. All displayed data relate to this unit number. If this is changed, the files list in the **Filename** field switches to the selected unit no.

Filename lists all files that were recorded with the selected test unit (here unit 1 - files: *.m01).
If the cursor keys “up” / “down” (↑/↓) are used to switch to another file, the data in this measurement file appear immediately along with the associated comments.
If the menu is clicked, a list of all the selected unit’s measurements in the given path opens, here C:\CID-PRO 4.00\messung, in which the desired file can be selected.

[...] **:** The **current path** from which the measurement files can be selected stands above the **Filename**. This path can be changed to a directory selection with the [...] button. You can change default setting of this entered path in the configuration, cf. sec. 4.2.5 - Configuration: Generally, page 44. Click the button and you can select the desired file

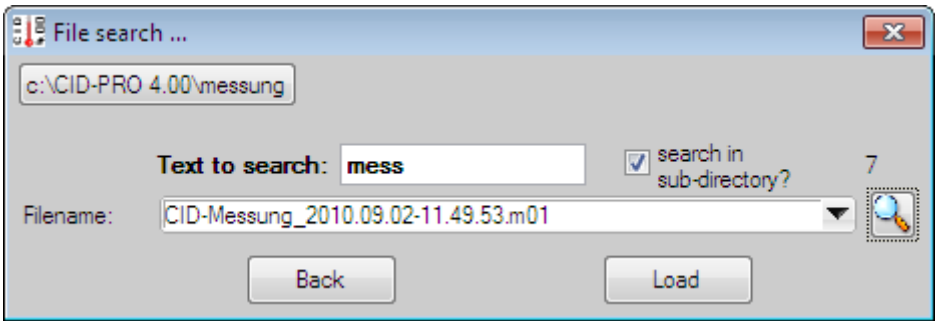
in your network. **Filename** and **measurement path** are automatically set after “Load" acknowledgement and the measurement information is displayed.

Load your desired measurement file into the graph window. The measurement is plotted on the graph after the measurement file has been completely read (can vary widely depending on size and data volume).

Active record is displayed (not greyed out), when one measurement record is running, which you can display directly.

The difference between **loading** and **active record** is that the active record is **updated**.

: Searching for a measurement file**?**
The following window opens after clicking the search button:



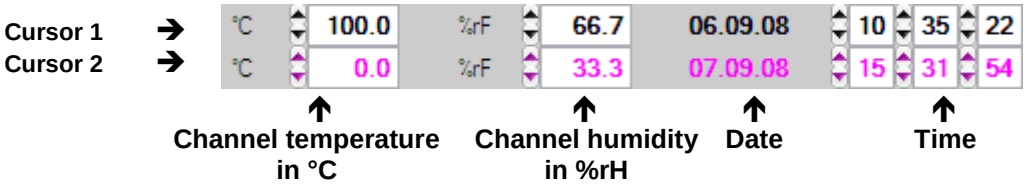
You have the following options here:

- **Path:** The search path is taken from the load window. If you want to change a measurement file's search path, click the button and select the desired path. Confirm with “Done”.
- **Text to Search:** Enter the text you want to search for here. All measurement files containing this text in there names are displayed as results.
- **Subdirectory:** You can only search in this directory for the selected path or include all the subdirectories.
- **File name:** List containing all files found.
- **7:** Number of files found.
- Search is **started**.
- **Load:** Read the measurement file and plot on the graph. Search and Load windows are closed.
- **Back:** Search function cancellation.

4.5.3.2 Working with graphical measurement-data analysis

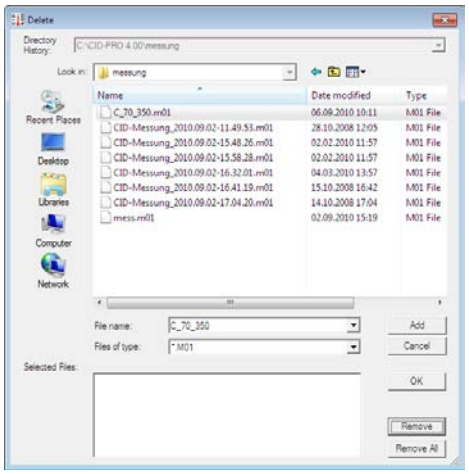
Your analysis can begin when you have opened your measurement file:

- **Zoom:** Display a characteristic region of your measurement.
  ➔ cf. sec. 0 - Zoom functions (Graphical measurement-data analysis)
- **Analysis:** Analyze your curve progressions.
  ➔ cf. sec. 4.5.3.8 - Analysis
- **Cursor:** Desired area can be either reached directly with the cursor or entered with the keyboard at the lower image border. Both of the left number fields relate here to the left scale and both in the middle to the right scale. The colours match those of the cursor.


Cursor 1 ➔
Cursor 2 ➔
°C 100.0 %rF 66.7 06.09.08 10 35 22
°C 0.0 %rF 33.3 07.09.08 15 31 54
Channel temperature in °C
Channel humidity in %rH
Date
Time

4.5.3.3 Delete measurement

You can select more several files at once here to remove no longer needed measurements:



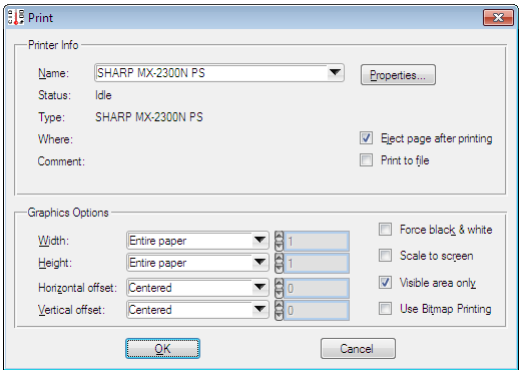
Confirm your selection with Remove (All).
You ultimately delete all the files you selected after clicking OK in the confirmation prompt.

Take note: You can choose the measurement's data type from the connected/configured unit or from among all files (*.*).

Handle deletion with care!!!
Deleted files and data are irrevocably lost!!!

4.5.3.4 Print measurement

The printer function prints out currently displayed and loaded measurement. Print out options can still be changed before spooling the measurement to the printer.



The printer can be selected in the upper area from among all installed windows printers. Printer-specific settings like colour or grey scale printing, portrait or landscape, or intake and exit paper tray can be made for the selected printer in the Properties… field.

Additional properties for the displayed measurement can be set in the lower part of the window:

Width and Height

Hardcopy width and height - the default value, **Entire paper**, expands the plot to use the entire width and height of the sheet. The printout's width and height can be alternatively given in 10^{th}s of a millimeter.

Horizontal and Vertical offset

The plot is **centered** on the page by default. A value in 10^{th}s of a mm can also be given however to adjust for the binding margin, for example.

Force black & white

Useful setting when sending a fax, because shades of grey are very badly transmitted via fax.

Bitmap printing

A finer, more optically appealing print image results without this selection. But bitmap printout can make sense on ground of compatibility. Perhaps this selection must be made when the printout doesn't work right. Without bitmap printout, problems can show up in connection with some printer drivers, especially when the PC has little memory.

4.5.3.5 Print measurement as PDF

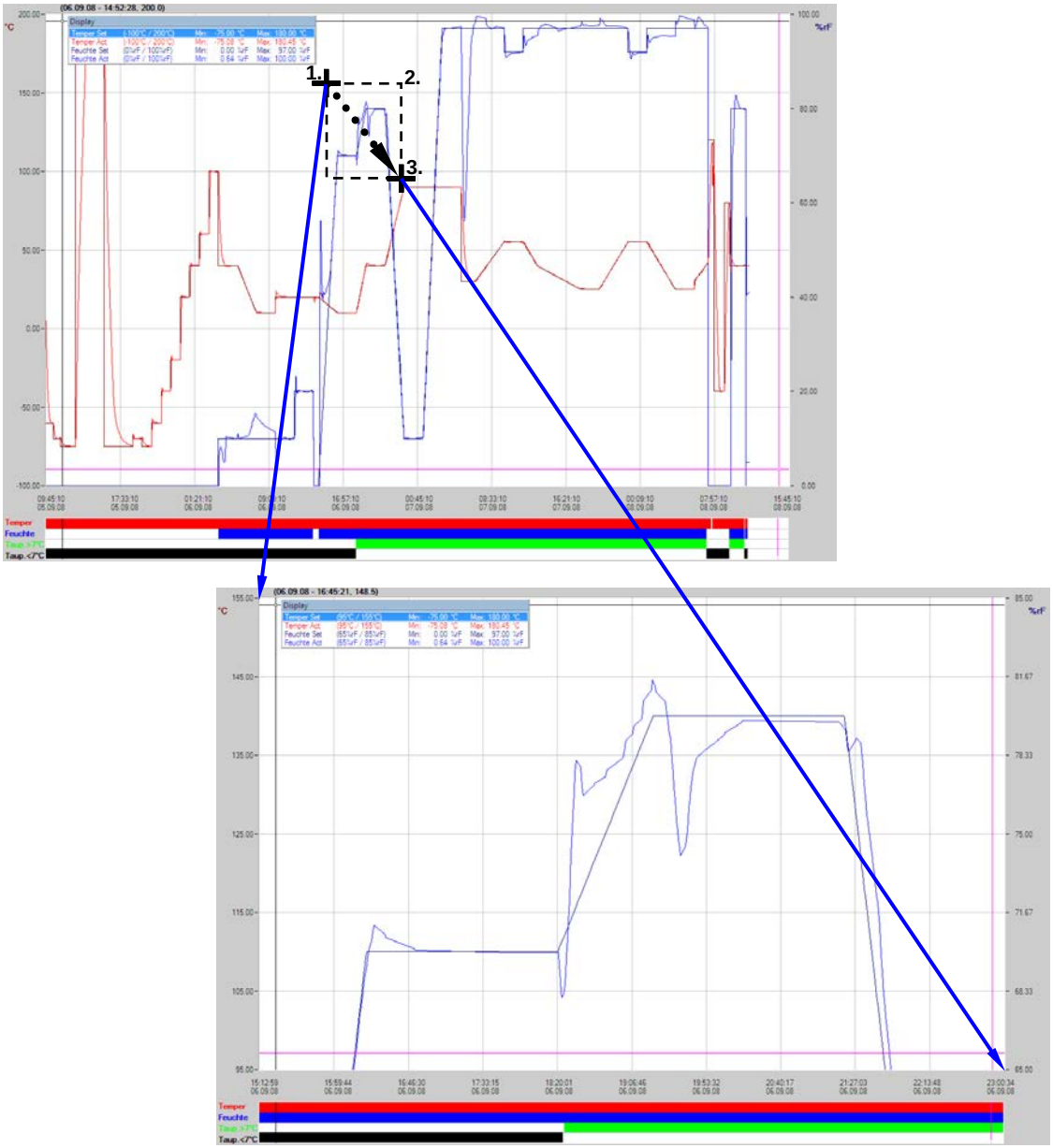
The function Print PDF creates a PDF file of the measurement displayed and loaded at that time. After you select this function a dialogue is opened in which the PDF file name and path can be indicated. The storage path is the standard directory for the measurement record. The standard name is the measurement displayed and loaded at present, e.g.:

Measurement record:	C_70_350.m01
PDF file:	C_70_350.pdf

4.5.3.6 Zoom functions (graphical measurement-data analysis)

The zoom function enables you to enlarge an area. You can repeat this procedure up to 19 times. In other words you can zoom 20 times. Proceed as follows to enlarge the desired area:

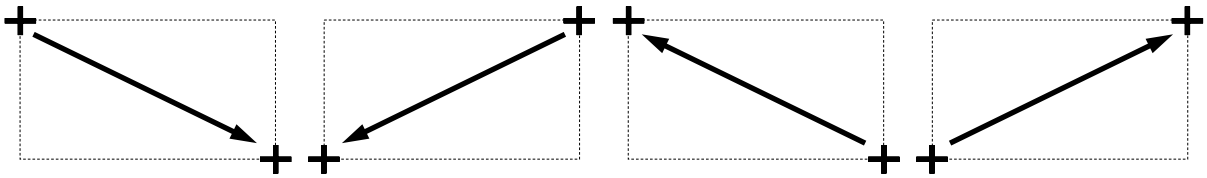
1. Right click the desired area's upper left corner and hold the mouse button down.
2. Now drag the mouse with the depressed right button to the desired area's lower right corner.
3. The zoom function is applied after releasing the right mouse button and the selected area is enlarged.



Take note: The point connectors' visible gradients can be displayed differently after zooming if the relation of the x to the y-axis no longer agrees. Checking the gradients by calculating the y segment length over x segment length shows that the gradient is in fact unchanged.
You can repeat this zoom process up to 19 times; cf. sec. 4.4.4.18 - Editor zoom functions, page 88 for a more detailed demonstration.

- **Full screen:** Return from any arbitrary zoom level to the overall view / full screen.
- **Zoom out:** Zoom out a level (shrink)
- **Zoom:** Zoom in a level (enlarge) assuming you've already defined this level. If not, then the function or button is greyed out. That way, you can always identify how far you have already zoomed.
- **Zoom to cursor positions:** Place the cursor on the desired area and zoom exactly into it.

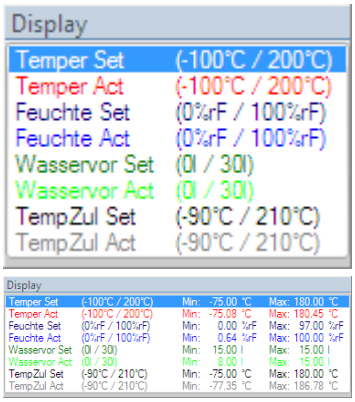
Take note: You can only zoom with precision on **one unit**.
The method of dragging the desired area with the mouse was explained in this instruction manual based on the upper left to lower right corner.
You can carry out this function in an **arbitrary direction**.



The zoom area is depicted during zooming by a **dashed rectangle**. This enables the area to be defined better.

4.5.3.7 Display

The currently displayed curves, in the associated colours, can be seen in the small display / legend on the graphic screen.
If you double click on of the analogue channels, the scaling changes (depending on option setting (cf. Sec 4.5.3.9 - Options, page 100)) left/right on the graph. The object as well as the area it denotes, change to the preset colour.
The values in brackets (e.g. (-100°C / 200°C)) display the **current ranges** of the scales. This is a very useful function when zooming.
Min/max. values are the minimum and maximum values of the individual channels of the current measurement. These are only displayed when the **Min/Max** checkbox is activated in the option "Display" (cf. Sec 4.5.3.9 - Options, page 100).


Display
Temper Set (-100°C / 200°C)
Temper Act (-100°C / 200°C)
Feuchte Set (0%rF / 100%rF)
Feuchte Act (0%rF / 100%rF)
Wasservor Set (0l / 30l)
Wasservor Act (0l / 30l)
TempZul Set (-90°C / 210°C)
TempZul Act (-90°C / 210°C)

Activating the **Display**: Check mark **View/Display** in the menu, key combination Ctrl+I or select **Extra ➔ Options ➔ Display ➔ Show Small Display**.

4.5.3.8 Analysis

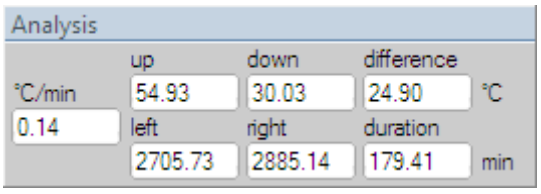
Values occur in the analysis deriving directly from the two cursors. If these cursors are placed at characteristic positions in the measurement, this position's features can be read off from the analysis.

The "**down**" and "**up**" values always relate to the **left scale** based on both cursors. Depending on which cursor is above, changing this cursor changes the "**up**" field. It behaves the same way for the "**down**" field.

The "**left**" and "**right**" values relate to relative time, based on the settings in the options. Depending on which cursor is left, changing this cursor changes the "**left**" field. It behaves the same way for the "**right**" field.

The left field, **°C/min**, represents the indicated curve's **calculated gradient** and consequently that of the two cursor crosshairs.

The **difference** and **duration** values of the area enclosed by the crosshair cursors serve to realise the measurement record and show the difference between the two axes (here °C and min).



Activating the **Analysis**: Check mark **View/Evaluation** in the menu, key combination Ctrl+A or select **Extra ➔ Options ➔ Display ➔ Show Evaluation**.

4.5.3.9 Options (graphical measurement-data analysis)

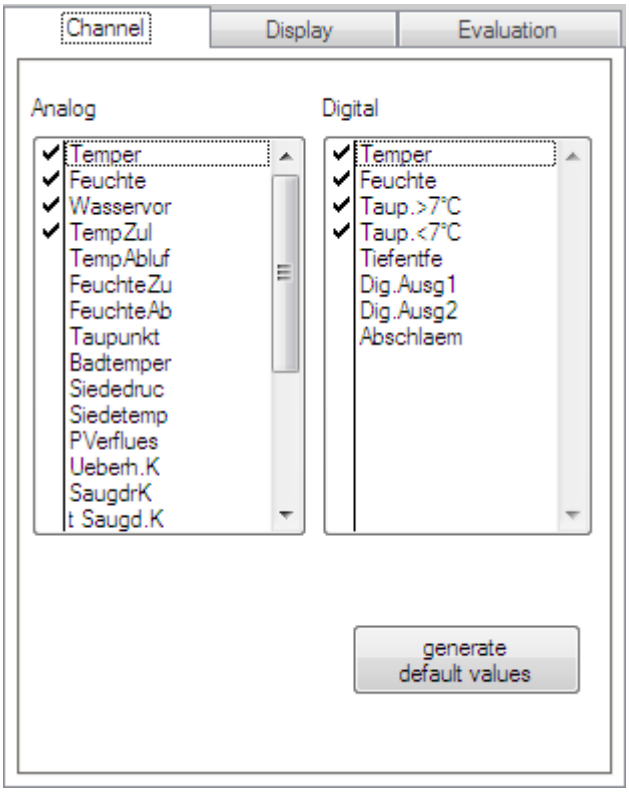
- **Preface**

  Various options can be set and changed in the following points for **channel**, **display**, and **evaluation**. You have the following options when exiting the options:

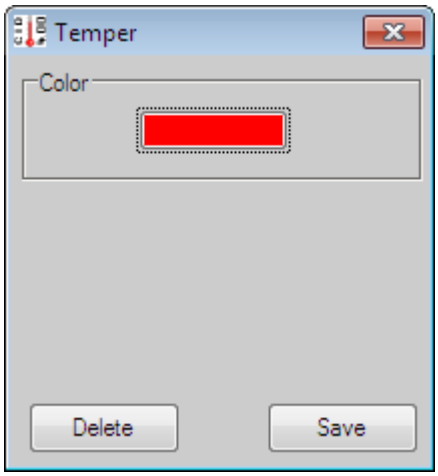
  - **Back:** The options window is closed without accepting the changes.
  - **temp…** The changes are accepted, but not saved, for this measurement's setting. This means that the measurement will in fact be displayed as desired, but these changes are no longer available when reopened.
  - **OK** All changes are permanently saved via file and are available to you when the measurement data analysis is reopened or CID-Pro 4.02 is restarted.

- **Channel**

  Click to select the analogue and/or digital channels that you want to see on the graph. By clicking, you have additional selection options in the window that appears for this channel.



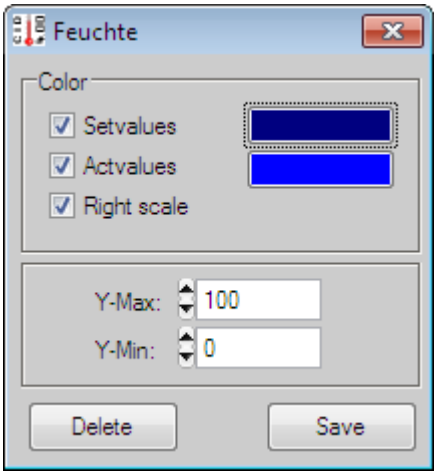
Digital channel:



This window appears by clicking a digital channel. The **colour** in which the channel, "**temperature**" in this case, is to be represented can be selected here.

With **Delete**, you remove the check mark and the channel is not presented.
With **Save**, the colour is accepted and the channel is presented on the graph (check mark appears).

Analogue channel:



This window appears by clicking an analogue channel. Here you can select this channel's **set** and/or **actual value**, here the "**humidity**", and the respective **colour**.

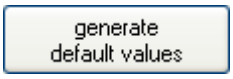
A selection of all possible colours (dependent on the windows system setting) opens by clicking on the colour area. Right click to select your desired colour. The channel is not shown if you have selected neither set nor actual value.

By clicking the **right scale**, this channel's scale is presented on the graph's right border (the left side is the default).

This has the advantage that you have the correct scale for several curves on the right or the left and the printout is clearer.
If you only want to look at a particular area of your curve, you can define this area with **Y-Max** and **Y-Min.** The maximum values must be greater than the minimum, otherwise the entry is ignored and the area not automatically adjusted to the curve.

With **Delete**, you remove the check mark and the channel is not presented.
With **Save**, the colour(s) is/are accepted and the channel is presented on the graph (check mark appears).

Take note:

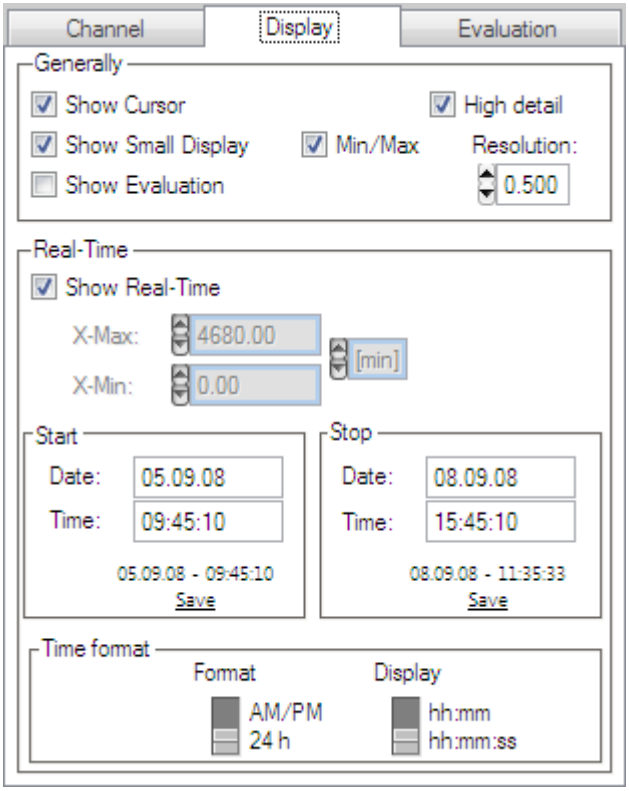


If your definition of the various channels must proceed quickly, you can define the default values, which appear as follows:

Digital channel	*Value*	*Colour*
Channel 1 (temperature)	☑ Yes	Red
Channel 2 (humidity)	☑ Yes	Blue
Channel 3	☑ Yes	Green
Channel 4	☑ Yes	Black

Analogue channel	*Status*	*Value*	*Colour*
Channel 1 (temperature)	Set value Actual value Right scale Y max Y min	☑ Yes ☑ Yes ☐ No 200 -100	Dark red Light red
Channel 2 (humidity)	Set value Actual value Right scale Y max Y min	☑ Yes ☑ Yes ☐ No 100 0	Dark blue Light blue
Channel 3	Set value Actual value Right scale Y max Y min	☑ Yes ☑ Yes ☐ No 0 0	Dark green Light green
Channel 4	Set value Actual value Right scale Y max Y min	☑ Yes ☑ Yes ☐ No 0 0	Black Dark grey

- **Display**



Generally

You have additional options in the display to adjust the graph to your wishes:

You can make the **cursor visible** here - this is recommended when printing several curves.
You can **show the Small Display** and the **Min/Max** values (cf. sec. 4.5.3.7 - Display, page 99) and **show the evaluation (analysis)** (cf. sec. 4.5.3.8 - Analysis, page 99).
You can present the entire measurement value display in more detail if you check the **High detail** option. The measurement value are presented in detail to a resolution of 0.1 units (reduces operation speed).

If you want to permanently define the time scale, **deactivate** the **Show Real-Time** display field.
Now set your desired **X-Max** and **X-Min** values. Due to automatic division, it is not always possible to maintain the permanently set time axis. Small differences can arise. If the graph should always adjust automatically, make sure when you exit Options with OK or “Default” that identical values or 0s appear in both fields!

Real-Time

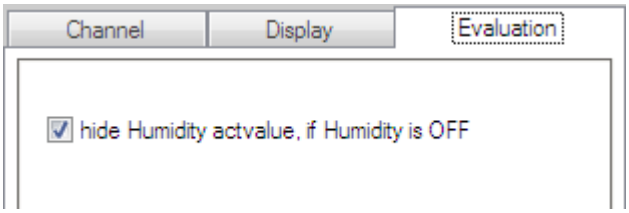
If you activate **Show Real-Time**, the time axis will be shown with exact time information.

You can define the appearance of the time axis yourself. To do this, enter the desired interval in the Start-date/time and Stop-date/time fields. Conform to the existing input format or your entry will be ignored.

The actual start-stop date is displayed in the field below, which is entered in the date/time field with **Save**.

The **Time format** can be varied using the **Format** and **Display** switches. If you change the settings, you can determine the changes directly from the screen and define them as defaults to best suit yourself.

- **Evaluation**



Hide Humidity actvalue, if Humidity is OFF is a function controlling the 2nd channel’s actual humidity value.

4.5.3.10 Excel conversion program

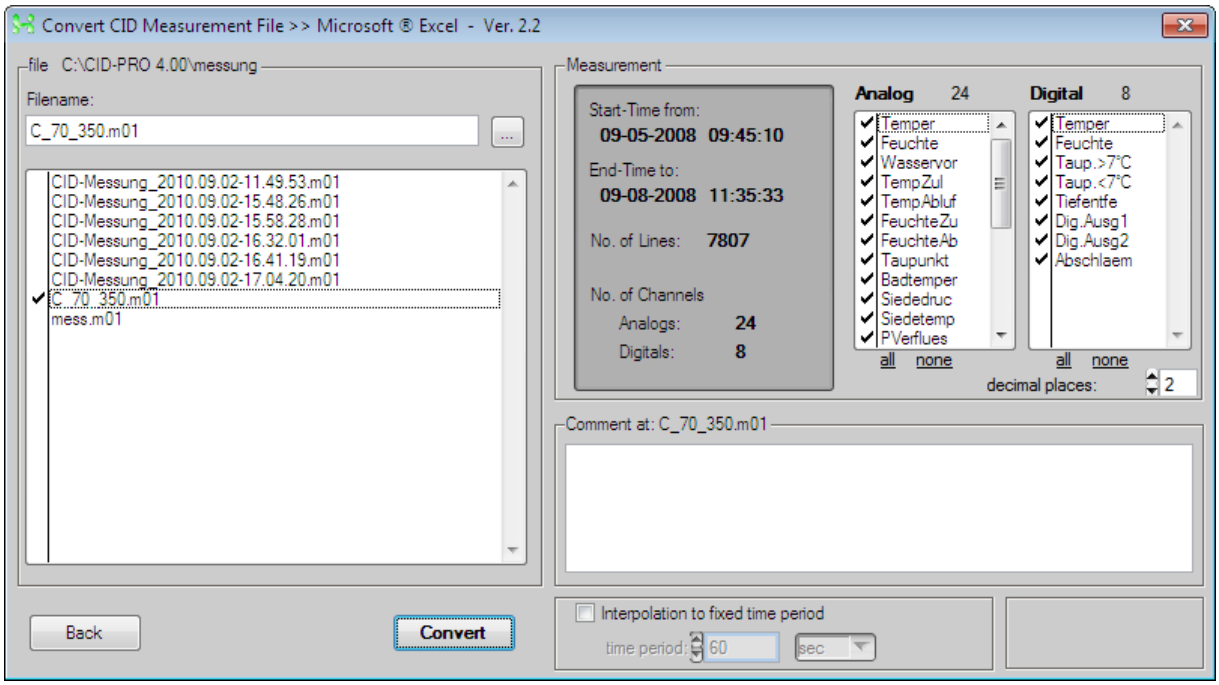
Measurement files, which Microsoft ® Excel can read and display, can be converted into ASCII formatted text files using the new conversion program **CID Measurement file >> Microsoft ® Excel - Ver. 2.2**.

This program can be started in two ways:

1. In the graphical measurement-data analysis via the menu entry **Extra ➔ Convert to Excel - Program**

2. By starting the ***CID-installation-path*\convert.exe** program in the program manager (windows explorer)

The conversion program starts after carrying out one of the two actions:



A list of all measurements stored in the selected directory - here, C:\CID-PRO 4.00\messung in the upper left - can be seen in the program's **left area**. All measurement files (*.*) are shown here and not just particular test units.
The files to be converted can be marked in the list. Multiple selections are possible.

The directory can be changed and a file directly selected with the ... button. The new path is then taken and the list updated based on the path.

In the program's **right area** stand the data describing in more detail the measurement active at the moment, selected in the **Filename** field, and marked in the list.

- Start/end time
- Number of lines, i.e. measurement values
- Number of analogue/digital channels
- Measurement data comments
- Listing of all analogue and digital channels

The **analogue** and **digital** lists provide all the channels, which can be represented with the measurement file. All channels are checked by default. In other words, all channels are processed during the conversion.
If, however, only particular channels are needed, because some channels are unimportant or there is just too much data, the important channels stay checked and the unneeded channels are deactivated (unchecked). Now only the channels activated and selected with check marks are converted.

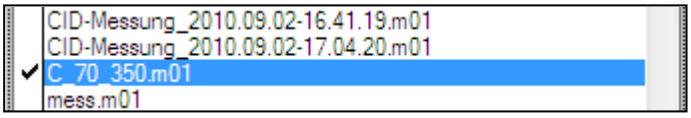
The **decimal places** relate to the output from the analogue channels.

The **Comments** are purely for display and cannot be changed. It certainly won't be included in the conversion.

Back terminates the program.

Convert starts the program. Now all marked files are individually converted one after another.

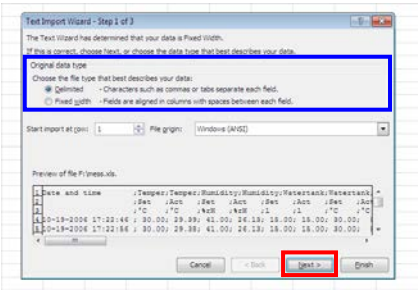
selected file ➔



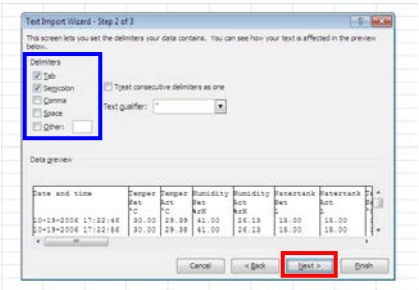
You must successively enter new file names for all selected files. It is not necessary to append a file extension because the conversion program independently appends ".csv", the usual Microsoft ® Excel extension.
Conversion, which can last a few minutes depending on file size, begins after correct entry of the respective new file names.
All existing data/lines, i.e. all currently selected analogue and digital channel measurement values, are converted.

Now you can read the converted files generated into Microsoft ® Excel or even another spreadsheet program. To this, when opening the file saved in text format, you can further define:

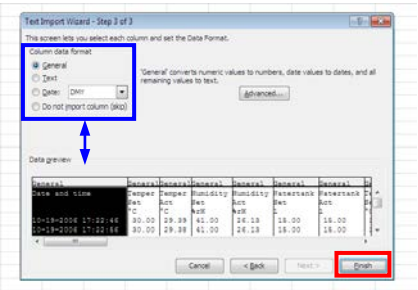
- **Open spreadsheet calculation**
- Select and open the desired file with **File/Open…**
- **Start the Text Import Wizard**



Select data type **Delimited**



Semicolon as delimiter



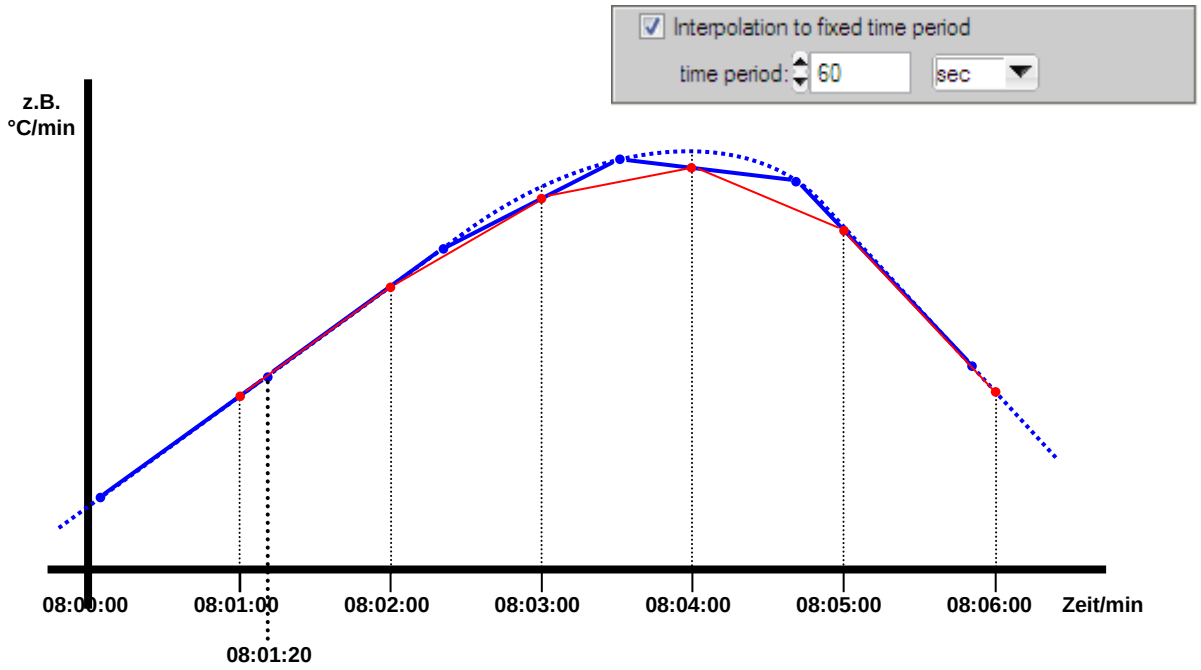
Possibly adjust **column data format**

- **Finish Text Import Wizard**

Microsoft ® Excel Help further describes the importation of text formatted files and should be able to help you with further problems.

Take note: The file created by the conversion program uses a comma as the decimal symbol (e.g. 123,40°C). Microsoft ® Excel may choose the decimal delimiter based on country (Menu: **Extras ➔ Options ➔ International ➔** delimiter resp **File ➔ Options ➔ Advanced ➔ Editing options ➔** delimiter). The delimiter must match here to import files to be converted without problem.
Individual table cells are separated with **semicolons (;)**.

System dependent value distortions could arise if the tables are compared with a different system. If you activate **Interpolation to fixed time period**, all measured values are adapted to the time pattern entered and required by you, in this case 60 seconds - 1 minute:



Legend:

- Original curve
- Original points form the measurement file that are easily time-shifted
- Interpolated/approximated curves from the measurement file (with time-shifted points)
- Calculated values, which now correspond to full minutes
- Curve through calculated values, which now correspond to full minutes

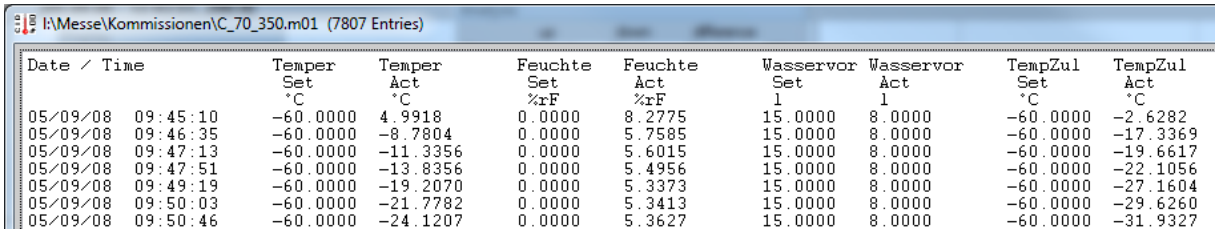
Caution: The measured values are adapted, in other words they are **calculated** and **not measured**!

Take note: The measurement value (y-axis, e.g. °C) is calculated **proportionally** from the **preceding** and **following** point.
For **minor changes** in the curve, the measured and calculated values are more or less **equal**.
For **major changes** in the curve, the calculated values are **inaccurate** from the start.

4.5.3.11 Display Measurement Values

This function displays the data records of the loaded measurement file in a separate window. In this display the data records are listed with the following information:

- **exact time information (date and time)**
- **all analogue channels (set and actual value) down to 4 decimal places**
- **all digital channels (actual value)**
- Number of listed data records/entries in the window's header, here 2842 entries!



I:\Messe\Kommissionen\C_70_350.m01 (7807 Entries)

Date / Time	Temper Set °C	Temper Act °C	Feuchte Set %rF	Feuchte Act %rF	Wasservor Set l	Wasservor Act l	TempZul Set °C	TempZul Act °C
05/09/08 09:45:10	-60.0000	4.9918	0.0000	8.2775	15.0000	8.0000	-60.0000	-2.6282
05/09/08 09:46:35	-60.0000	-8.7804	0.0000	5.7585	15.0000	8.0000	-60.0000	-17.3369
05/09/08 09:47:13	-60.0000	-11.3356	0.0000	5.6015	15.0000	8.0000	-60.0000	-19.6617
05/09/08 09:47:51	-60.0000	-13.8356	0.0000	5.4956	15.0000	8.0000	-60.0000	-22.1056
05/09/08 09:49:19	-60.0000	-19.2070	0.0000	5.3373	15.0000	8.0000	-60.0000	-27.1604
05/09/08 09:50:03	-60.0000	-21.7782	0.0000	5.3413	15.0000	8.0000	-60.0000	-29.6260
05/09/08 09:50:46	-60.0000	-24.1207	0.0000	5.3627	15.0000	8.0000	-60.0000	-31.9327

In this display, the measured values can be compared and the ranges analysed exactly, such as measured values between 1 p.m. and 2 p.m. of the same day.

Under

- **completely** the data records of the complete file are displayed!
- **cursor position** the data records for times between the two cursors are displayed. This function is only executed if the cursors are active. In this case, the start and end time of the cursors and/or the order are not of importance.

Note: The open measurement file is not changed by this display!

4.5.3.12 Copy to clipboard

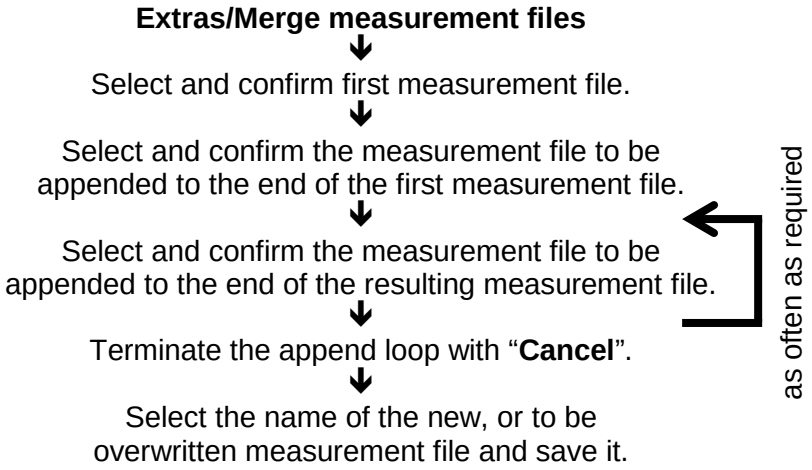
To be able to insert the current graphical measurement-data analysis view into Microsoft ® Word, the view must be copied to the clipboard.

This function saves the screen to the clipboard as a picture. You can ultimately insert the view into all programs having access to the clipboard and consequently the ability to insert images. Microsoft ® Word, Microsoft ® Paint, Microsoft Photo Editor or even Corel Photo-Paint for example, **insert it as a new image**.

The view described here describes the graphical measurement-data analysis screen without symbol or command bar as saved to the clipboard. View/analysis arrangement (whether and where the dialogs are located), zoom factor (is a section displayed enlarged), options setup (which channels are presented) and the program size itself can be determined and are taken into consideration when copying to the clipboard.
A comment will be displayed at the top of the copy stating the software version, copy date and time and file name and path.

4.5.3.13 Merge measurement files

This function gives you the opportunity to merge measurement files. You have, for example, split measurement files or you only want to merge part of a measurement into a file. The function executes by means of selection dialogs and not via a separate window:


Extras/Merge measurement files
Select and confirm first measurement file.
Select and confirm the measurement file to be appended to the end of the first measurement file.
Select and confirm the measurement file to be appended to the end of the resulting measurement file.
Terminate the append loop with "Cancel".
Select the name of the new, or to be overwritten measurement file and save it.
as often as required

Take note: The measurement files' structure will be investigated thereby insuring that only identical measurement files are merged. A message will notify you of a non-identical measurement file structure and this file will not be considered. You can however select a measurement file.

4.5.3.14 Cut current Measurement File (Cursor)

If only a certain time range is necessary from a measurement file, the loaded measurement file may be cut. The two cursors are used to define the range to be saved as a cut file.
Proceed as follows:

- **Open the measurement file to be cut**
- **Mark the range with the two cursors**
- **Execute the function 'cut current measurement file'**
  Now, the opened measurement file has been cut and saved in a new file with the appendix '_Cut'!
- **Open the newly saved cut measurement file**

Name convention:

Original file:	**C_70_350.m01**
Cut file:	**C_70_350_Cut.m01**

4.5.3.15 Settings

The complete settings of the graphic display are saved in one setting. That means, settings, for example, in the options analogue and digital channels and their presentation are stored in the setting. Different settings can be defined for various purposes, depending on what should be displayed.

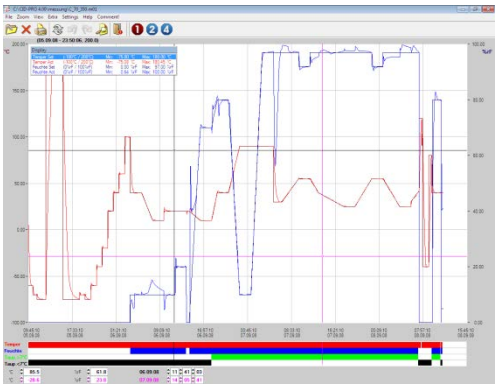
These settings can only be switched with a click of the mouse.

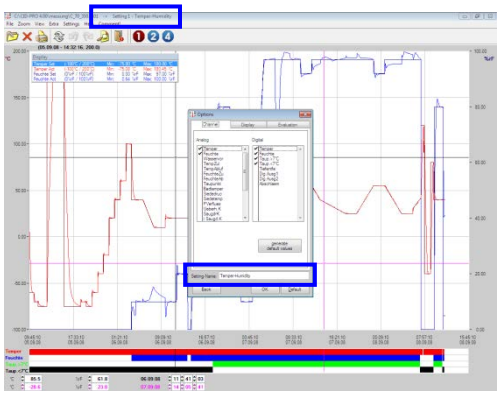
The procedure to create new settings is as follows:

- **Setting 1** is the **Start setting**, which is present from the start and cannot be deleted.
- Define the presentation of the graph in **Options** e.g. number and presentation of the analogue and digital channels or the real-time display etc.
- Select in the **Settings menu** the **New Setting** entry to create a new setting ➔ the presentation of the graph window is reset to the standard settings.
- Now define the presentation of the graph for the 2nd setting in **Options** e.g. number and presentation of the analogue and digital channels or real-time display etc.
- Now select other settings and options that are useful.

Various settings are briefly described as follows:

1. Setting: Temper-Humidity

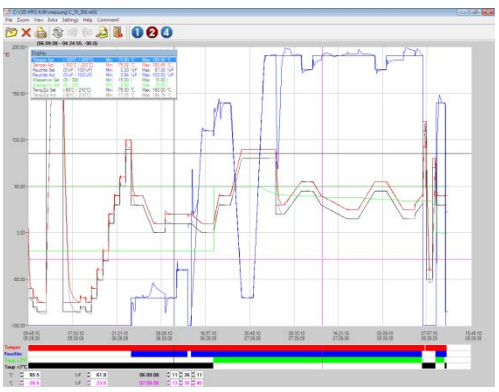


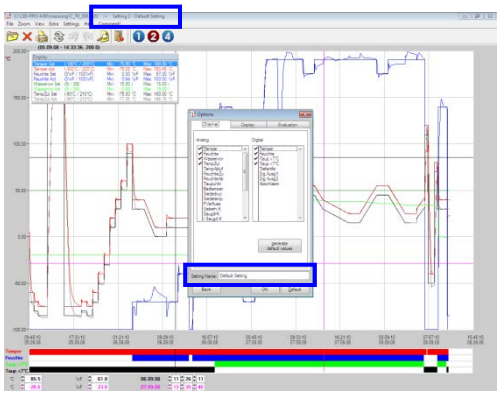


Display:
Temperature (Set/Act)
Humidity (Set/Act)

Setting Name:
Temper-Humidity

2. Setting: Default Setting

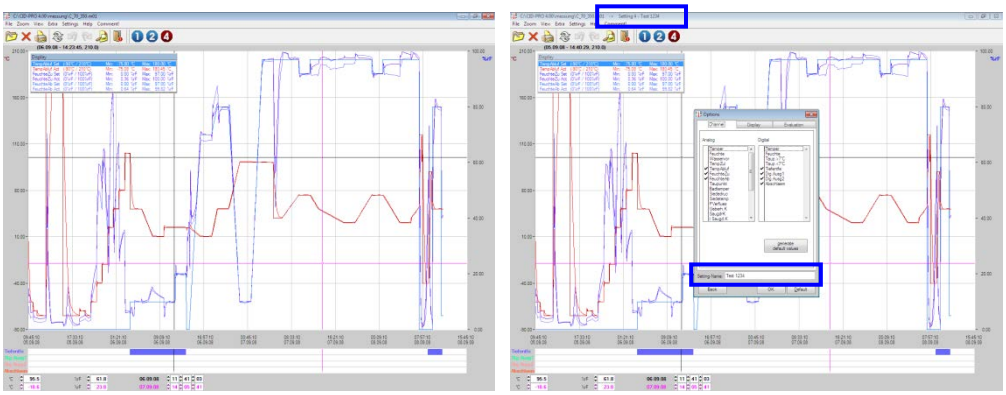




Display:
Temperature (Set/Act)
Humidity (Set/Act)
Watertank (Set/Act)
TemperIn (Set/Act)

Setting Name:
Default Setting
(the first 4 analogue and digital channels were selected ➔ **default values**)

4. Setting: Test 1234



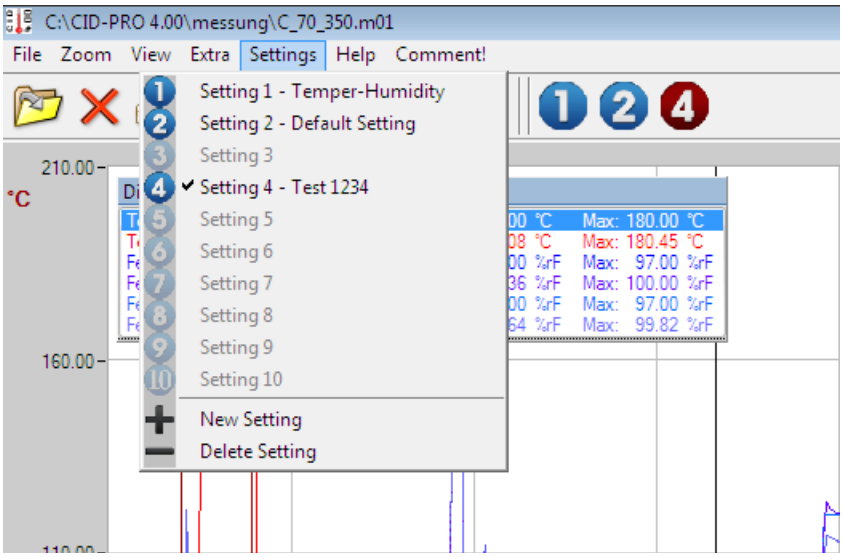
Display:
TemperOut (Set/Act)
HumidityInlet (Set/Act)
HumidityOut (Set/Act)

4 other digital channels as the standard setting.

Setting Name:
Test 1234

Characteristics of the setting displays:

- **New Setting** ➕ (in the Settings menu) is used to create a new setting.
- **Delete Setting** ➖ (in the Settings menu) is used to **delete the setting currently displayed**.
- By clicking on a setting number, e.g. 4 - 4 in the setting menu or in the toolbar 4 , this setting will is be loaded.
  - ➔ A defined setting is displayed in the menu in regular font and, where applicable, the setting name is displayed. The symbol is displayed in the toolbar.
  - ➔ A non-defined settings is displayed in the menu, dimmed and cannot be selected. This setting is not available in the toolbar (cf. the Setting 3 examples shown here)
  - ➔ The selected setting is ticked in the menu and displayed red in the toolbar 4.

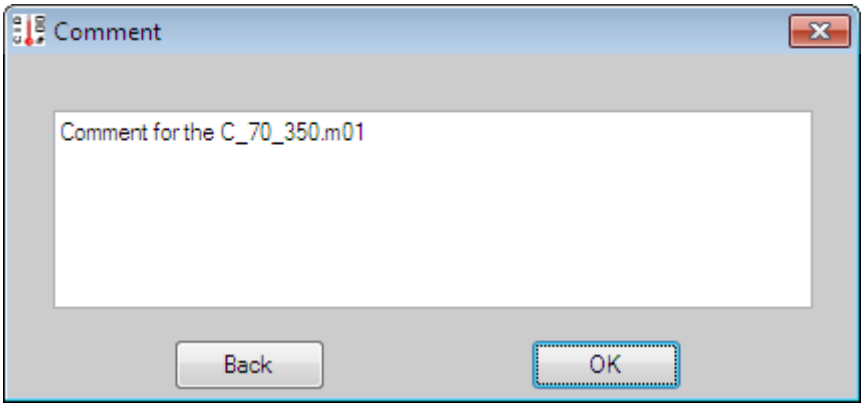


- A new setting is always placed in the next available storage location.
  - ➔ Setting 3 is created.
- The setting name can be freely selected in Options and will be reproduced when the title bar is selected.

Take note: All settings directly relate to the selected/loaded file.
It is not possible to load another file for each setting.

4.5.3.16 Comments (graphical measurement-data analysis)

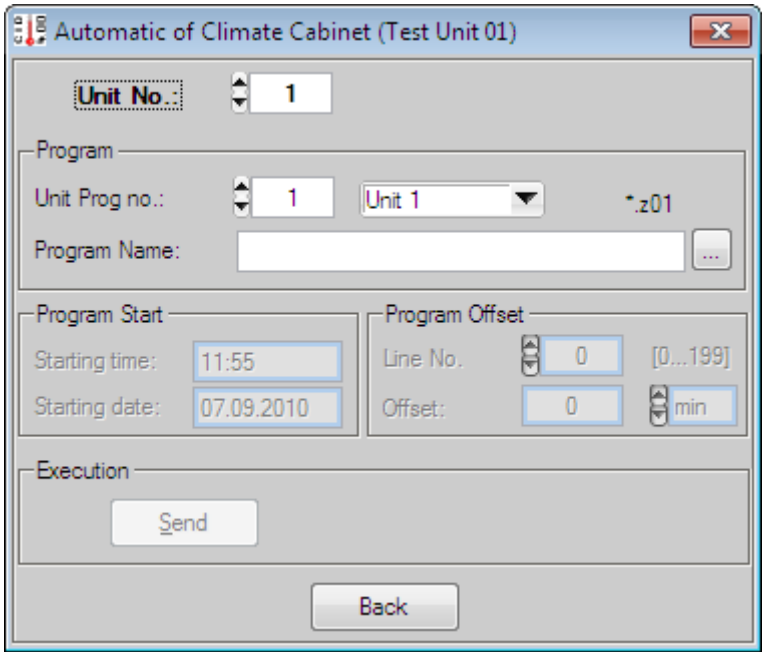
Comments belonging to the measurement open that you can arbitrarily change here. All text editor functions are possible here:



Take note: Maximum comment length: 255 characters!

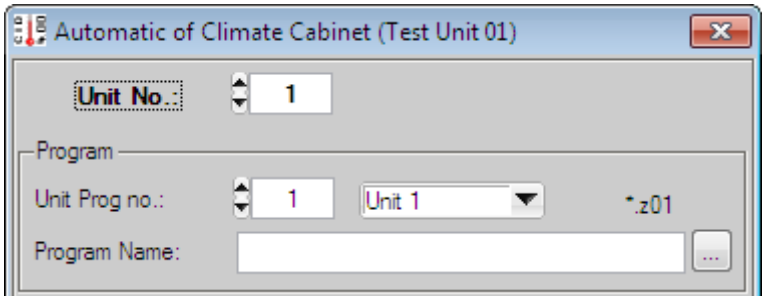
4.6 Starting test programs (automatic)

Starting test programs produces automatic operation. In the process, the compiled test programs are transmitted to the selected test unit.



4.6.1 Selection the test-cycle program

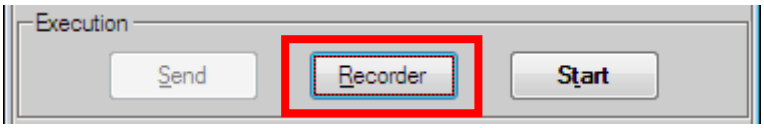
Choose the desired **Unit No** to which the test program should be sent.
The number under which the program is stored in the controller is defined under **Unit Prog No**.
The **program type** selection, here **Test Unit 1**, indicates whether a unit program like unit 1 (*.z01) can be selected or a program from the data pool, meaning all *.P* programs. The adjacent text on the right, here *.z01, shows which kind of program may be selected.



Program Name shows the desired program that was selected with the ... button in the file selection window.
"**Send**" transmits test program data, but only if a program was selected.

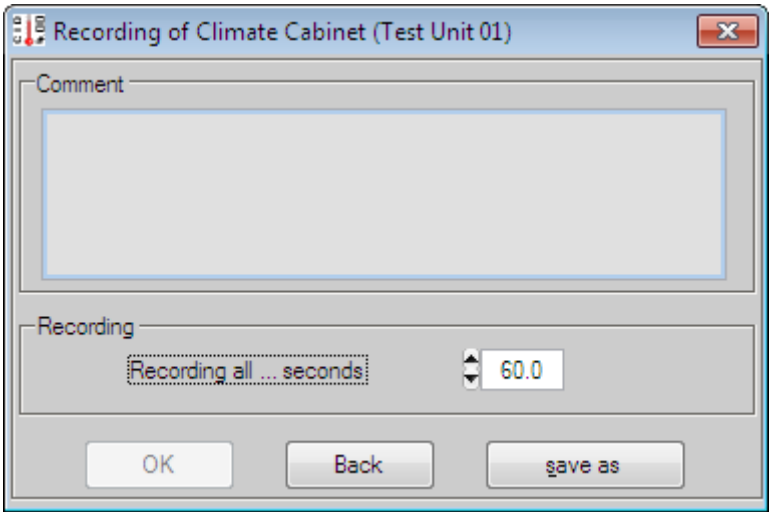
4.6.2 Recording the test-cycle program

You have the option of starting a test program recording.



Please proceed as follows to activate the recording:

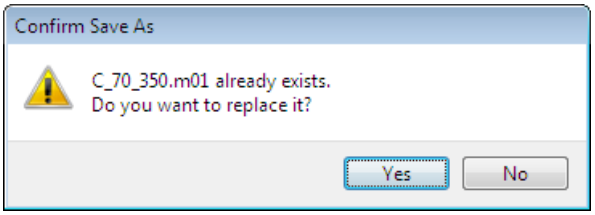
1. Clicking on "**Recorder**" opens the following window:



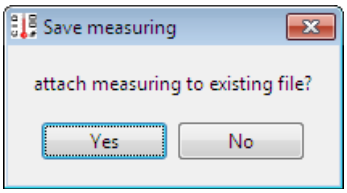
2. You give the measurement file a name by selecting a file with **save as** in the following file-save window, or creating a new file and confirming with **save**.

   If you want to **append a measurement** to an already **existing file**…

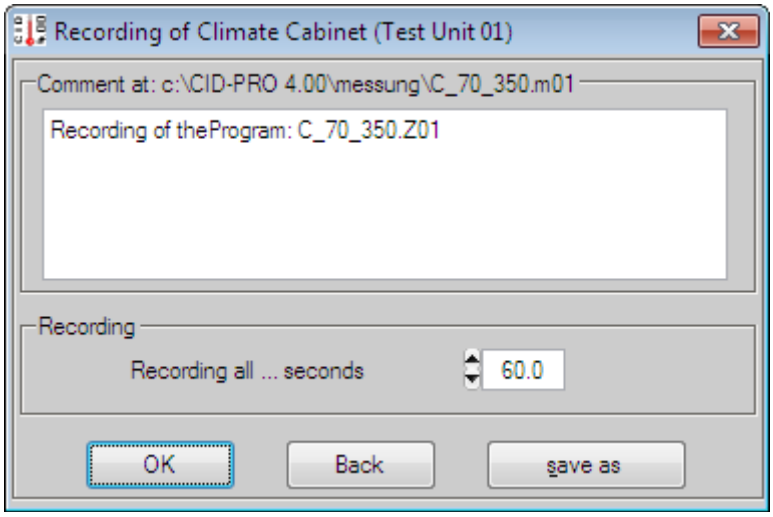
   - Select the existing file.
   - Confirm that this is the file you want to replace or overwrite.



   - Choose YES to append the new measurement to the already existing file or NO to permanently overwrite the selected (existing) file.



3. If possible, enter a distinguishing comment for this program and consequently for the measurement. You can describe the progression in more detail with the **comment** or insert special remarks.



4. The recording rate (**Recording all … seconds**) defines the time intervals at which recording occurs and is consequently critical for the recording data set.
For a test program with few changes, it normally suffices to record every 5 minutes ➔ 300 seconds.
For programs with frequent changes, a one minute or 30 seconds default value is quite sensible. The exact information varies for each test unit and test program and can be set arbitrarily.

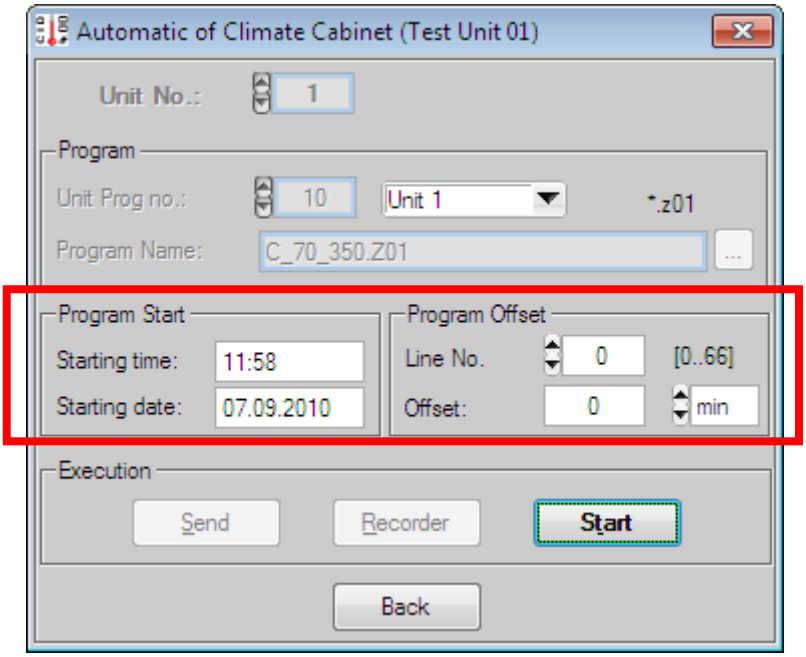
Please note: The minimum value of the recording rate is dependent on the scanning rate in the configuration!
This interval only applies to the currently selected unit. If you start further recording with another unit, you can enter another recording interval there.

The recording principally has a very easy, system-defined temporal error which you can calculate out using the Excel conversion program (cf. sec. 4.5.3.10 - Excel conversion program, page 103).

5. The recording settings are accepted with “**OK**” and discarded with “**Back**”.

4.6.3 Start options

After program transmission it is possible to enter a **Starting** - time and date - and a **Offset** for the program



Program Start:

Starting time and **date** are entered via the keyboard. In this connection, any arbitrary, admissible date within a year can be entered. The time must conform to the hh:mm (hour:minute) format. The entry is ignored if the prescribed formats are not adhered to.
If a time is entered prior to the current time, having thus already passed, the current clock time is assumed ➔ so first change the date then the clock time.
The current date is assumed if an incorrect date is entered.

Take note: **Check the current system date!!!**

Program Offset:

The **Line No.** field defines the start line and serves to skip over the beginning of the program. The range within which the entry can lie is given to the right of the starting line field and depends on the length of the selected program, in this case [0..66].
The information in the **Offset** field changes with the entry of a starting line. Here the time to be skipped is calculated.
Loop iterations and wait functions are not taken into consideration during the calculation. The lead time can be entered directly if you want to provide a lead time in a loop. A "-1" is then shown in the start time field since a line assignment missing.

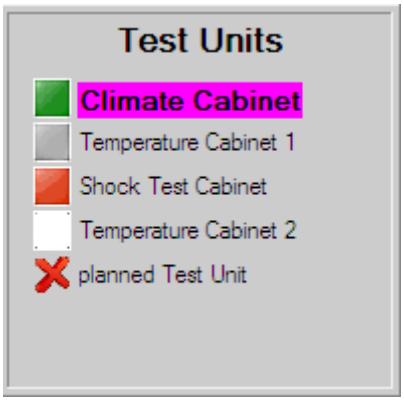
The current clock time and program start on the first line are defaulted to if program start-time or program lead time line are not entered ➔ Start: now and on the 1st line.

4.6.4 Automatic mode

Automatic operation starts after confirmation with "**Start**" (all settings are accepted and processed) and "Back" (Automatic window is closed).

Display for the recording:

If you have started an automatic recording, the selected test unit's background changes to **pink** in the unit overview display (cf. sec. 4.1.3 - Test Units, page 21):

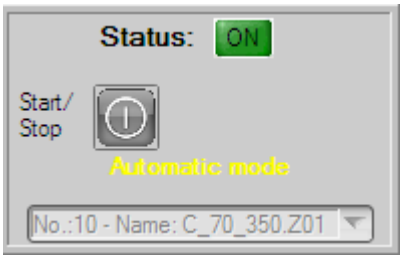


Display for the starting time:

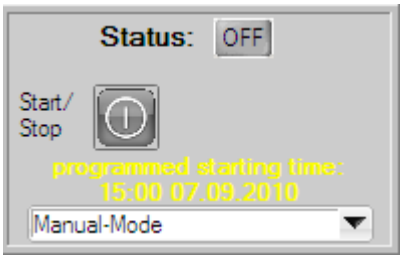
The test unit starts the program at the given time!

The unit status display changes depending on the kind of start time point - immediately or later - you have chosen (cf. sec. 4.1.5 - Unit and error status, page 23):

Start immediately:
Automatic mode



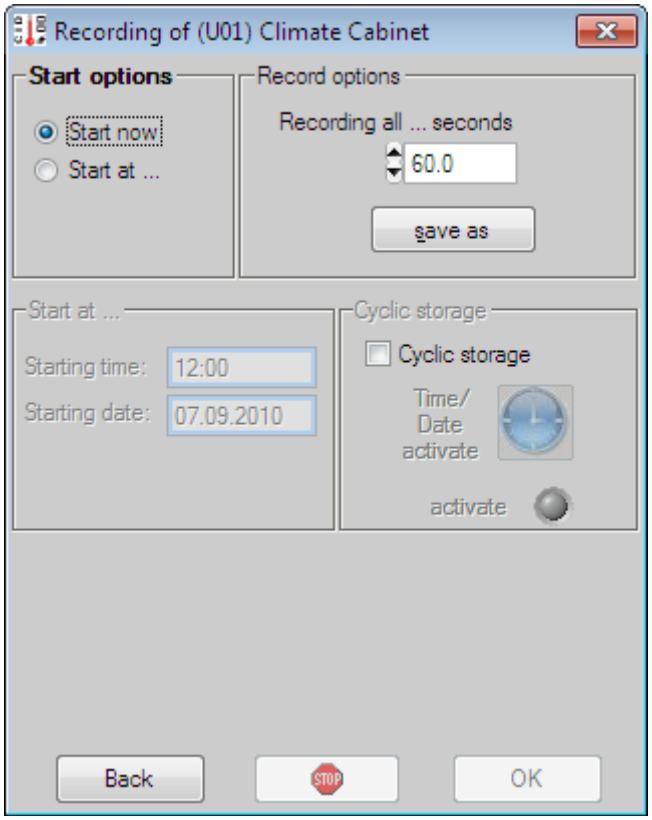
Start later:
programmed starting time:
15:00 07.09.2010



Take note: Automatic recording shuts off automatically after the program terminates. In contract, manual recording (cf. sec. 4.7 - Manual measurement recording, page 117) continues running after program termination.

4.7 Manual measurement recording

Continuous saving of measured in data is activated in the manual measurement recording menu (name of test unit currently selected in status overview is shown in the title).



4.7.1 Starting a manual measurement recording

Record options:

The recording rate (Recording all … seconds) defines the minimum time intervals, which should separate measurement points, and is consequently critical for the recording data set.
For a test program with few changes, it normally suffices to record every 5 minutes ➔ 300 seconds.
For programs with frequent changes, a one minute or 30 seconds default value is quite sensible. The exact information varies for each test unit and test program and can be set arbitrarily.

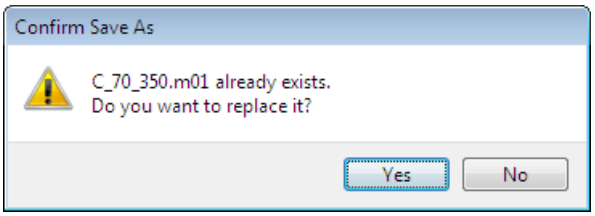
Take note: Minimum recording rate depends on the scanning rate in the configuration!
This interval applies only for ***this currently selected unit***. You can provide a different recording interval there if you start another recording with a different test unit.

In principle, the recording has a very minor, system dependent, temporal error, which you can compensate for with the Excel conversion program (cf. sec. 4.5.3.10 - Excel conversion program, page 103).

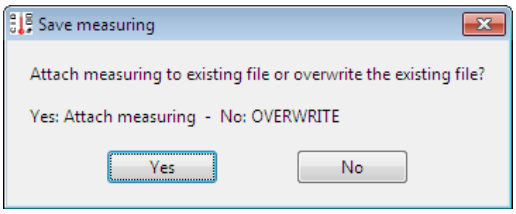
Enter a file in a file selection window with the **save as** button into which the measurements should be stored. This selection is necessary so that the recording can be started.

If you want to **append a measurement** to an already **existing file**…

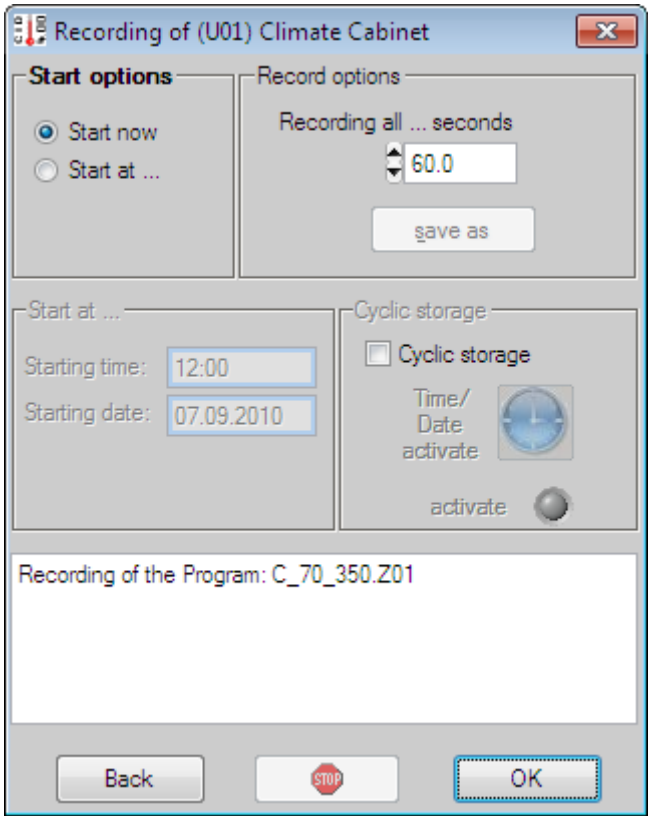
- Select the existing file
- Confirm that this is the file you want to replace or overwrite.



- Choose YES to append the new measurement to the already existing file or NO to permanently overwrite the selected (existing) file.

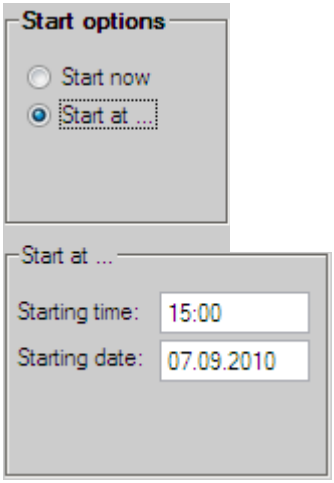

Save measuring
Attach measuring to existing file or overwrite the existing file?
Yes: Attach measuring - No: OVERWRITE
Yes
No

A comment window will appear in which you can describe a measurement in more detail or enter special remarks if you have selected an already existing or new measurement file.



Start options / Start at…:

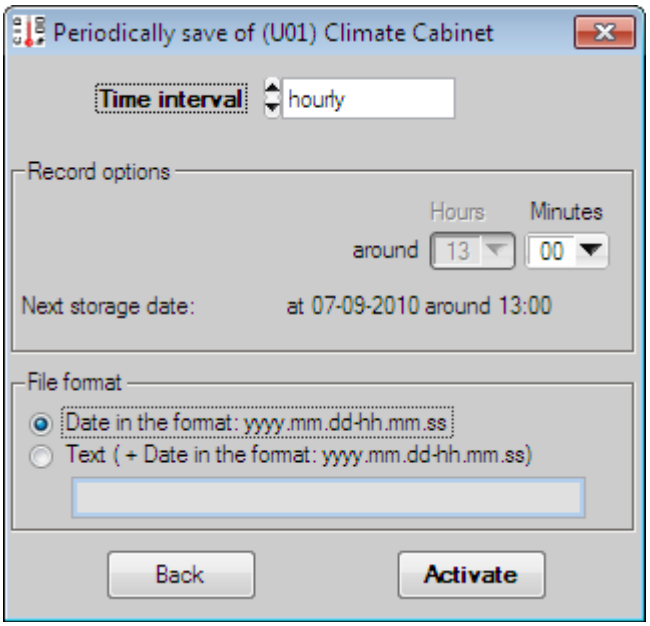
Besides the immediate recording start, the delayed start can also be activated. Start time and date are entered via the keyboard. In this connection, any arbitrary, admissible date within a year can be entered. The time must conform to the hh:mm (hour:minute) format. The entry is ignored if the prescribed formats are not adhered to.
If a time is entered prior to the current time, having thus already passed, the current clock time is assumed ➔ so first change the date then the clock time.
The current date is assumed if an incorrect date is entered.



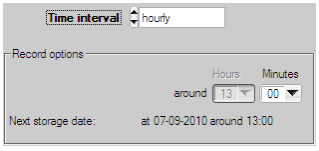
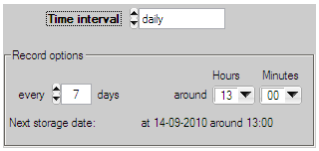
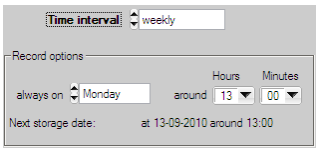
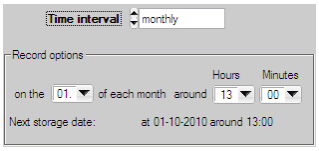
Take note: **Check the current system date!!!**

Cyclic storage:

Cyclic storage make sense if you have extremely large datasets or you want to have, for example, a measurement file completed daily during a very long test cycle. A window opens to specify the cycle interval if you activate this function:

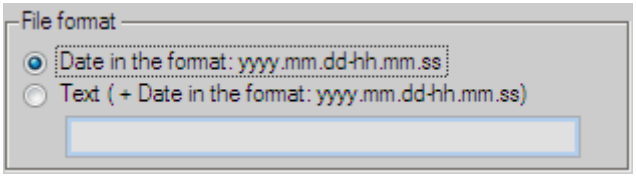


The following time intervals are available to you:

Time interval	***Storage options***		
hourly		minutes	**5 by the minute** (00, 05, 10, 15, ..)
daily		no. of days + hours/minutes	**max. 60 days +** by the hour + 5 by the minute (00, 05, 10, 15, ..)
weekly		Week day + hours/minutes	**Weekday (Sun-Sat) +** by the hour + 5 by the minute (00, 05, 10, 15, ..)
monthly		Day of the month + hours/minutes	**01.-28th of the month +** by the hour + 5 by the minute (00, 05, 10, 15, ..)

If you change the interval and the parameters associated with it, the **next storage date** will be immediately updated.

Configure into the file format how automatically created measurement files should be identified.



- **Date** in the format: yyyy.mm.dd-hh.mm.ss
  ➔ year(4 place).month(2 place).day(2 place)-hour(2 place).minute(2 place).seconds(2 place)
- **Text + Date** in the format: yyyy.mm.dd-hh.mm.ss

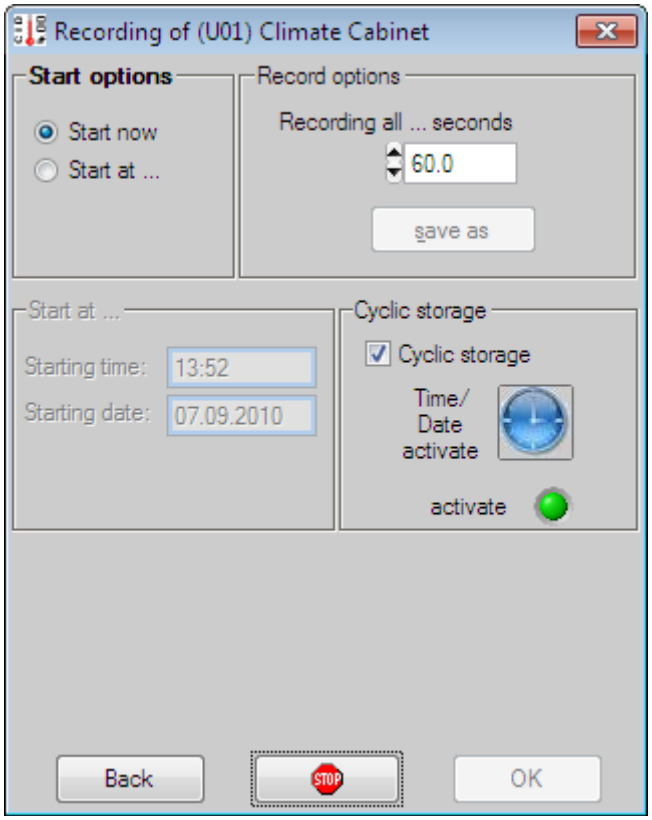
stored measurement file: *C:\CID-PRO 4.00\messung***Test-SensorA.m01**
automatic file 1: *C:\CID-PRO 4.00\messung***Test-SensorA_2010.08.26-14.30.00.m01**
automatic file 2: *C:\CID-PRO 4.00\messung***Test-SensorA_2010.08.26-15.30.00.m01**
…

In the process, the measurement values are always stored in the original-measurement file, here **Test-SensorA.m01**. This is renamed with the storage time, here to **Test-SensorA_2010.08.26-14.30.00.m01**, and re-saved so that recording can be continued with the original-measurement file.
Activate the second file format variant and define a text substring if you still want to append another text.

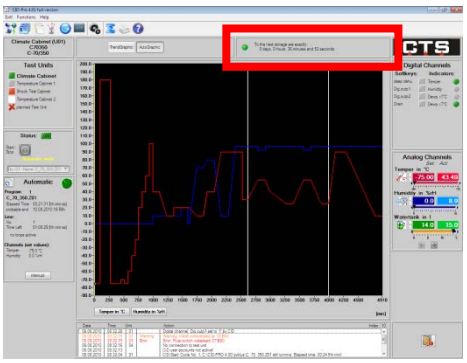
Example text substring: A375
stored measurement file: C:\CID-PRO 4.00\messung**Test-SensorA.m01**
automatic file 1: C:\CID-PRO 4.00\messung**Test-SensorA_A375_2010.08.26-14.30.00.m01**
automatic file 2: C:\CID-PRO 4.00\messung**Test-SensorA_A375_2010.08.26-15.30.00.m01**
…

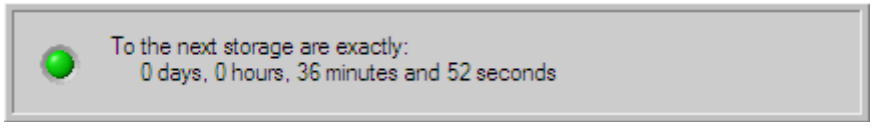
The settings for the cyclic storage of the recording are accepted with "**Activate**" and discarded with "**Back**".

A **green LED** in the manual measurement recording window indicates the activated cyclic storage after activating the recording.



The activated cyclic storage is also displayed in the status overview's top bar, again identified by a **green LED**. Next to it, the days, hours, minutes, and seconds remaining before the next storage are shown.

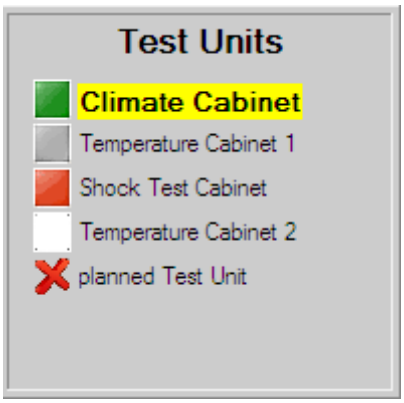




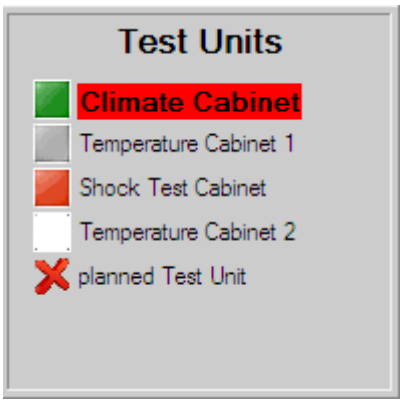
The recording starts if these settings are accepted with “OK”.
Such a manual recording changes the selected test unit’s background in the unit overview display (cp. sec. 4.1.3 - Test Units, page 21) to **yellow** or **red**:

manual started, active recording

with **immediate start**



with **delayed start**



Take note: This started manual recording runs until the hand stops again (cf. sec. 4.7.2 - Stopping a manual measurement recording, page 122). It is to be used mainly during manual operation or when automatic recording is not possible.

4.7.2 Stopping a manual measurement recording

In contract to automatic recording, manual recording does not stop independently.

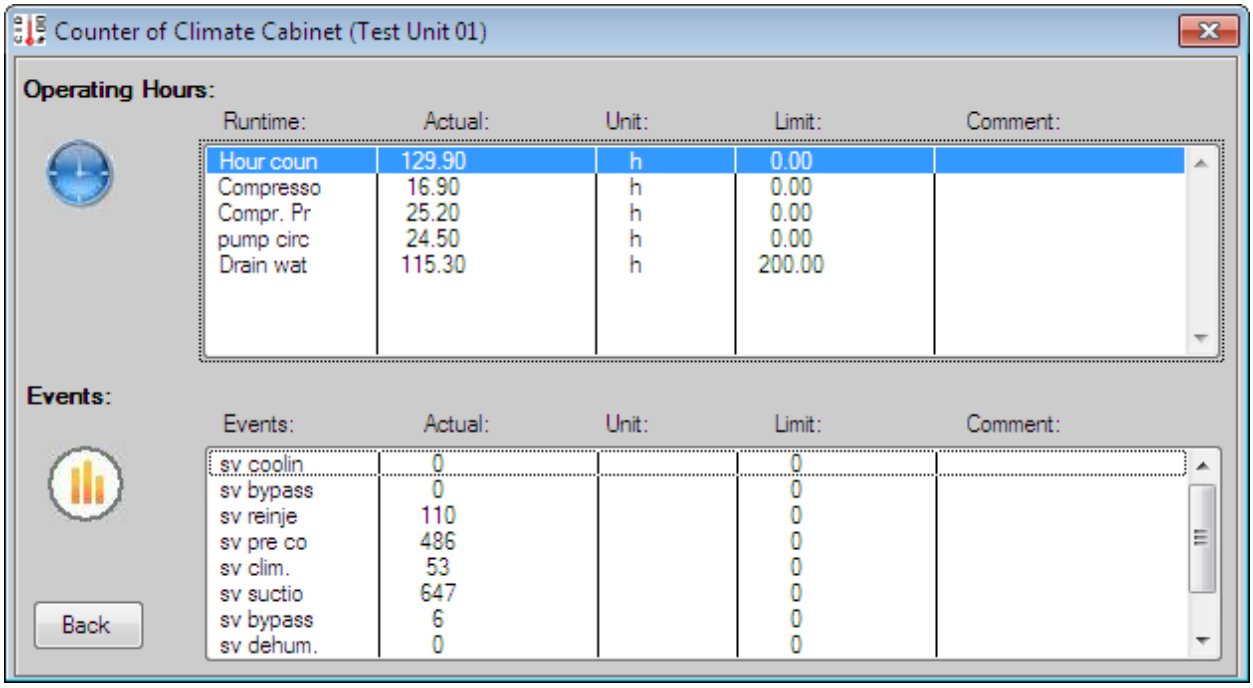
Click the

icon if you want to stop manual recording of the selected test unit.

Take note: The Stop icon can also stop automatic recording.

4.8 Operating hours and event counter

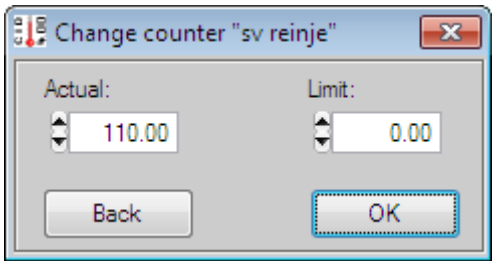
The counter menu presents two different lists:


Counter of Climate Cabinet (Test Unit 01)
Operating Hours:
Runtime: Actual: Unit: Limit: Comment:
Hour coun 129.90 h 0.00
Compresso 16.90 h 0.00
Compr. Pr 25.20 h 0.00
pump circ 24.50 h 0.00
Drain wat 115.30 h 200.00
Events:
Events: Actual: Unit: Limit: Comment:
sv coolin 0 0
sv bypass 0 0
sv reinje 110 0
sv pre co 486 0
sv clim. 53 0
sv suctio 647 0
sv bypass 6 0
sv dehum. 0 0
Back

The top list shows the operating hour's counter - here the total operating hours in unit 1 and further operating hours from the compressor and other components used.
In the bottom list, the event counter is shown e.g. from solenoid valves or overpressure switch. These count, for example, the valve switching cycles.

All counters are shown with the instantaneous value (actual value), its unit, and the maximum value (threshold), which the counter may assume.
If **CID-Pro 4.02** receives a warning alert from the active test unit, the associated line in the list is shown in red and a remark is appended.

If you are authorized to change the displayed counters, you can open this window by double clicking, or pressing the "Enter" key on, the activated line:

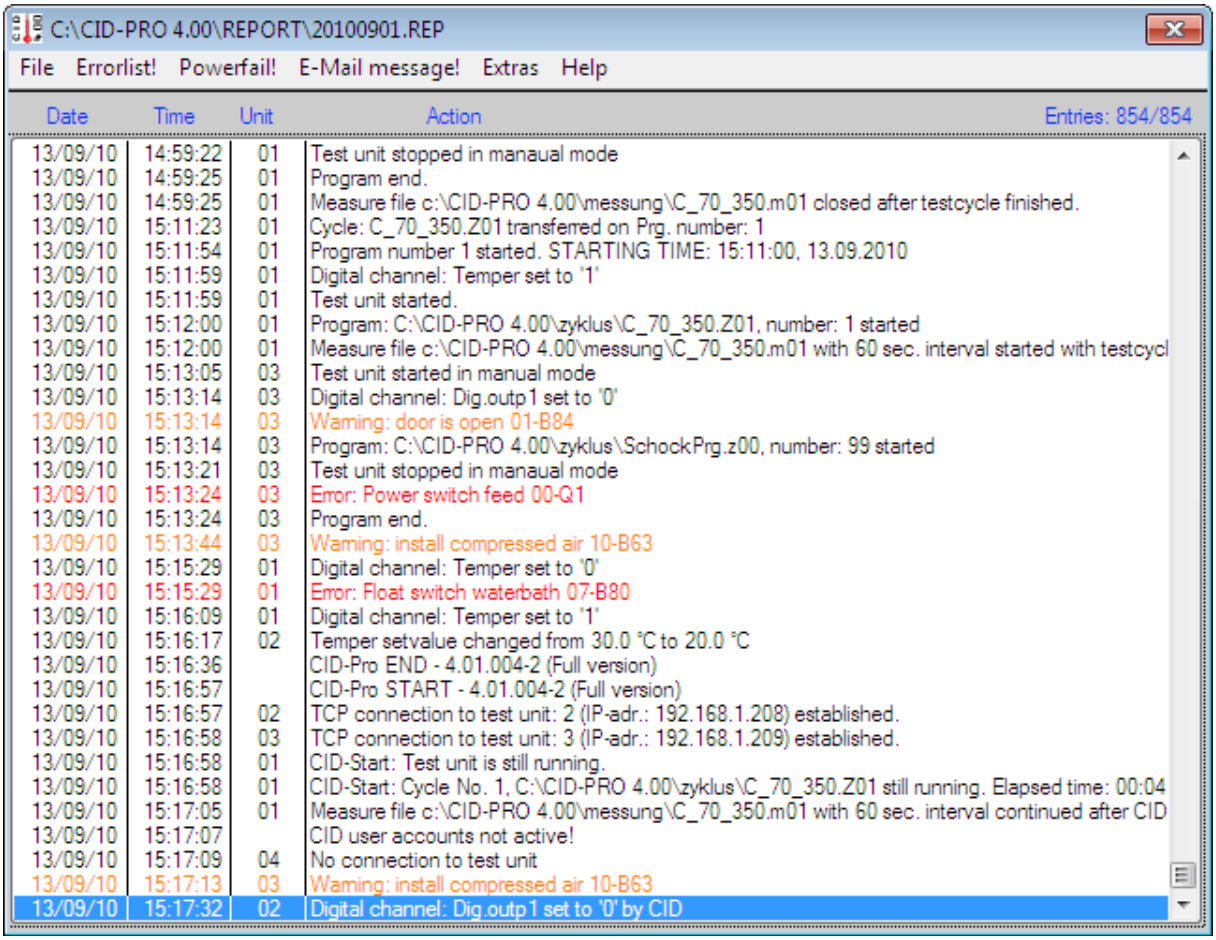


The threshold and/or actual values appear, depending on which values you are able to change. Confirm the modifications with **OK** and send the new values to the active unit. You can ignore the changes with **Back**.

4.9 Event logs (reports)

4.9.1 Preface

The report function runs constantly in the background with **CID-Pro 4.02** software. It records various user and test unit actions.


C:\CID-PRO 4.00\REPORT\20100901.REP
File Errorlist! Powerfail! E-Mail message! Extras Help
Date Time Unit Action Entries: 854/854
13/09/10 14:59:22 01 Test unit stopped in manaual mode
13/09/10 14:59:25 01 Program end.
13/09/10 14:59:25 01 Measure file c:\CID-PRO 4.00\messung\C_70_350.m01 closed after testcycle finished.
13/09/10 15:11:23 01 Cycle: C_70_350.Z01 transferred on Prg. number: 1
13/09/10 15:11:54 01 Program number 1 started. STARTING TIME: 15:11:00, 13.09.2010
13/09/10 15:11:59 01 Digital channel: Temper set to '1'
13/09/10 15:11:59 01 Test unit started.
13/09/10 15:12:00 01 Program: C:\CID-PRO 4.00\zyklus\C_70_350.Z01, number: 1 started
13/09/10 15:12:00 01 Measure file c:\CID-PRO 4.00\messung\C_70_350.m01 with 60 sec. interval started with testcycl
13/09/10 15:13:05 03 Test unit started in manual mode
13/09/10 15:13:14 03 Digital channel: Dig.outp1 set to '0'
13/09/10 15:13:14 03 Warning: door is open 01-B84
13/09/10 15:13:14 03 Program: C:\CID-PRO 4.00\zyklus\SchockPrg.z00, number: 99 started
13/09/10 15:13:21 03 Test unit stopped in manaual mode
13/09/10 15:13:24 03 Error: Power switch feed 00-Q1
13/09/10 15:13:24 03 Program end.
13/09/10 15:13:44 03 Warning: install compressed air 10-B63
13/09/10 15:15:29 01 Digital channel: Temper set to '0'
13/09/10 15:15:29 01 Error: Float switch waterbath 07-B80
13/09/10 15:16:09 01 Digital channel: Temper set to '1'
13/09/10 15:16:17 02 Temper setvalue changed from 30.0 °C to 20.0 °C
13/09/10 15:16:36 CID-Pro END - 4.01.004-2 (Full version)
13/09/10 15:16:57 CID-Pro START - 4.01.004-2 (Full version)
13/09/10 15:16:57 02 TCP connection to test unit: 2 (IP-adr.: 192.168.1.208) established.
13/09/10 15:16:58 03 TCP connection to test unit: 3 (IP-adr.: 192.168.1.209) established.
13/09/10 15:16:58 01 CID-Start: Test unit is still running.
13/09/10 15:16:58 01 CID-Start: Cycle No. 1, C:\CID-PRO 4.00\zyklus\C_70_350.Z01 still running. Elapsed time: 00:04
13/09/10 15:17:05 01 Measure file c:\CID-PRO 4.00\messung\C_70_350.m01 with 60 sec. interval continued after CID
13/09/10 15:17:07 CID user accounts not active!
13/09/10 15:17:09 04 No connection to test unit
13/09/10 15:17:13 03 Warning: install compressed air 10-B63
13/09/10 15:17:32 02 Digital channel: Dig.outp1 set to '0' by CID

When you open the report menu, the current report file is always automatically opened. You will see all actions which have been recorded together with the settings which you made with the options (cf. sec. 4.9.3.9 - Options (event log), page 135).

All actions are filed in a file which is issued new every month. The date of creation can be seen from the filename.
In this example, the file was created on **01.09.2010**.
(***CID-installation-path*\report\20100901.REP**)

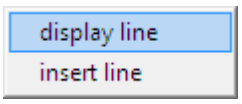
Please note: From version 4 of **CID-Pro** software onwards, the report files are saved in the following format

yyyymmdd.rep

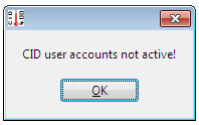
➔ Year(4-digit)Month(2-digit)Day(2-digit).rep

This allows them in the system to be considerably better filed, and enables searches for particular dates.

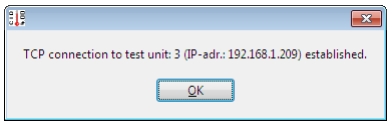
It can happen that the entries in the list are so long that they are not completely readable. Left click the desired line. You get a context menu if you now click the right mouse button. Here you can select **display line** to pop up a window displaying the line's entire content.



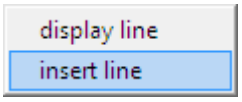
➔



or

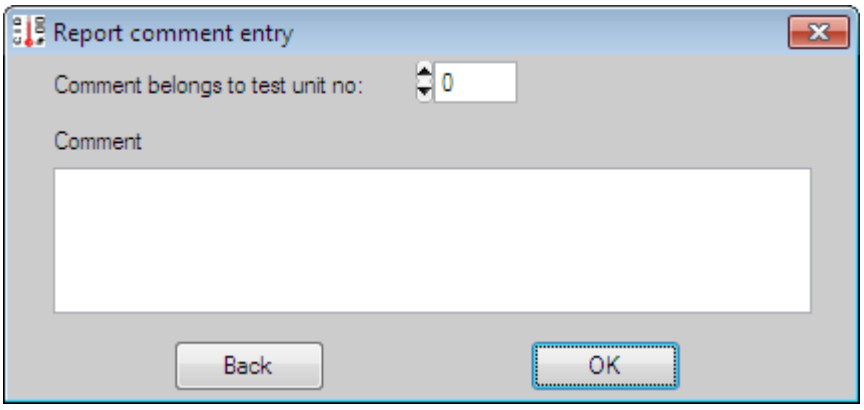


You have the additional option of inserting comment lines into the report via this context menu.



➔

You can insert a free text explanatory comment in the comment field e.g. power failure at the PC.



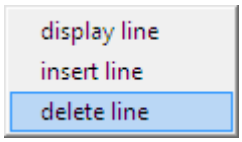
The list displays user-entered report lines are displayed in blue.
If the test unit number is given as 0 (zero), the entry is not assigned to any particular test unit, but to the entire system:

09.09.10 | 10:06:21 | | Power failure at the PC

With a unit number greater than 0 (zero), e.g. 1, the entry is assigned directly to this test unit:

09.09.10 | 11:09:03 | 01 | Start of the Test-Sensor ABC

In this way, lines inserted via the context menu can also be deleted again. No **confirmation prompt** appears, however.



Take note: **Deleted comment entries are irrevocably lost!!!**

4.9.2 Buttons

Menus	*Symbol*	*Submenus*	*Key combi-nation*	*Reference*
File		**New**	**Ctrl+N**	New report cf. sec 4.9.3.1, p. 127
		Load	**Ctrl+L**	Load report cf. sec 4.9.3.2, p. 127
		Delete	**Ctrl+Del**	Delete report cf. sec 4.9.3.3, p. 127
		Print ... **List completely**	**Ctrl+C**	Print report … cf. sec 4.9.3.4, p. 128
		List completely as PDF		
		List filtered	**Ctrl+F**	
		List filtered as PDF		
		Export ... **List completely**		Export report … cf. sec 4.9.3.5, p. 128
		List filtered		
		Exit	**Ctrl+E**	Exit the event logs
Error list!				Error list cf. sec 4.9.3.6, p. 129
Power fail!				Power fail cf. sec 4.9.3.7, p. 131
E-Mail message!				E-Mail message cf. sec 4.9.3.8, p. 132
Extras		**Options...**	**Ctrl+O**	Options (event logs) cf. sec 4.9.3.9, p. 135
Help		**Help**	**F1**	

4.9.3 Event log functions

Here you can carry out the following report file actions:

4.9.3.1 New report

Generate a new report file. CID-Pro 4.02 sets up the file name and chooses the current date. If a file already exists, it is chosen as active:

- all actions are appended or
- the file is regenerated - all previous entries are lost in the process.

4.9.3.2 Load report

Load a report file from the ***CID-installation-path*\report** subdirectory and display it with the restrictions of the **Extras ➔ Options** submenu. (cf. sec. 4.9.3.9 - Options (event log), page 135).

4.9.3.3 Delete report

No longer needed report files can be deleted here. You must confirm the deletion with a confirmation prompt.

Take note: **Deleted entries are irrevocably lost!!!**

4.9.3.4 Print report …

Two options can be selected when printing a report / a report file:

All entries in the report file (complete list):
The function prints out the **complete report file** for you. It contains all messages and comments.

The current list as displayed and filtered (filtered list):
The function prints the report file for you taking submenu **Extras ➔ Options** limitations into account (cf. sec. 4.9.3.9 - Options (event log), page 135). All comments and messages, which you have not filtered out, are printed.

The selected function then prints the report entries as text on the connected standard printer and/or creates a PDF file with the desired content.
After you select the respective PDF function, a dialogue is opened in which you can indicate the PDF file name and path. The storage path is the standard directory for report files. The standard name is the addition 'Report' followed by the name of the loaded report file, e.g.:

Report file:	20130401.REP
PDF file:	Report_20130401.pdf

If the filtered report file is to be created as a PDF file, 'filtered' is added, e.g.:

Report file:	20130401.REP
PDF file:	Report_20130401_filtered.pdf

4.9.3.5 Export report …

There are two possible ways to export a report / a report file:

All entries in the report file (complete list):
This function exports the **complete report file**. It contains all messages and comments.

The current list as displayed and filtered (filtered list):
This function exports the report file taking into account the restrictions of the submenu **Extras ➔ Options** (cf. sec. 4.9.3.9 - Options (event log), page 135). All comments and messages which are not filtered out are exported.

The selected function then exports the report entries as a text file.
After you select the respective function, a dialogue is opened where you can indicate the name and the path of the saved text file. The storage path is the standard directory for report files. The standard name is the addition 'Report' followed by the name of the loaded report file, e.g.:

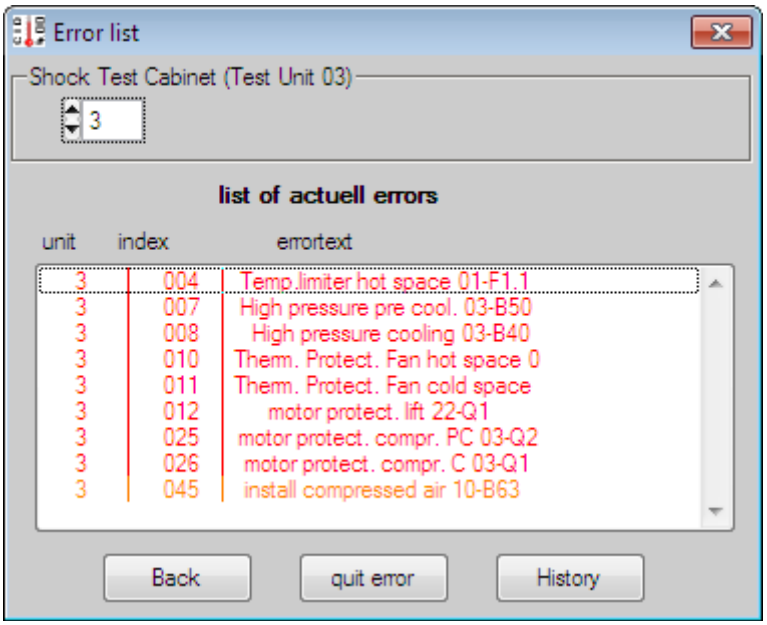
Report file:	20130401.REP
Text file:	Report_20130401.txt

If the filtered report file is to be created as a TXT file, the addition 'filtered' is added, e.g.:

Report file:	20130401.REP
Text file:	Report_20130401_filtered.txt

4.9.3.6 Error list

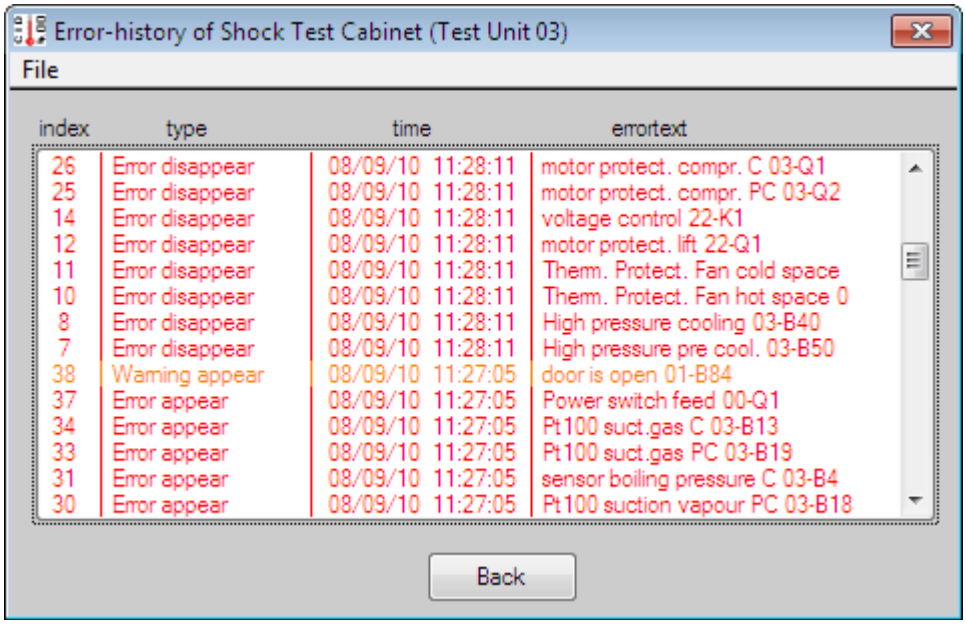
The **Error list** menu option shows a list of all errors currently at issue in the chosen test unit.


Error list
Shock Test Cabinet (Test Unit 03)
3
list of actuell errors
unit index errortext
3 004 Temp.limiter hot space 01-F1.1
3 007 High pressure pre cool. 03-B50
3 008 High pressure cooling 03-B40
3 010 Therm. Protect. Fan hot space 0
3 011 Therm. Protect. Fan cold space
3 012 motor protect. lift 22-Q1
3 025 motor protect. compr. PC 03-Q2
3 026 motor protect. compr. C 03-Q1
3 045 install compressed air 10-B63
Back
quit error
History

You can select individual errors to **quit error** them. This means that if the error is no longer an issue in the unit, the software will delete it and the unit's (sub)function is re-enabled. This list is helpful for obtaining an overview of the error in the individual test unit's controller. It is needed under certain circumstances when it is not possible to fix all the errors in the unit, but limited operation of the unit's sub functions is necessary.

Back closes the error list window again.

Error history reads an error history from the test unit:


Error-history of Shock Test Cabinet (Test Unit 03)
File
index type time errortext
26 Error disappear 08/09/10 11:28:11 motor protect. compr. C 03-Q1
25 Error disappear 08/09/10 11:28:11 motor protect. compr. PC 03-Q2
14 Error disappear 08/09/10 11:28:11 voltage control 22-K1
12 Error disappear 08/09/10 11:28:11 motor protect. lift 22-Q1
11 Error disappear 08/09/10 11:28:11 Therm. Protect. Fan cold space
10 Error disappear 08/09/10 11:28:11 Therm. Protect. Fan hot space 0
8 Error disappear 08/09/10 11:28:11 High pressure cooling 03-B40
7 Error disappear 08/09/10 11:28:11 High pressure pre cool. 03-B50
38 Warning appear 08/09/10 11:27:05 door is open 01-B84
37 Error appear 08/09/10 11:27:05 Power switch feed 00-Q1
34 Error appear 08/09/10 11:27:05 Pt100 suct.gas C 03-B13
33 Error appear 08/09/10 11:27:05 Pt100 suct.gas PC 03-B19
31 Error appear 08/09/10 11:27:05 sensor boiling pressure C 03-B4
30 Error appear 08/09/10 11:27:05 Pt100 suction vapour PC 03-B18
Back

The occurrence, resolution, and acknowledgement (deletion) of individual errors and warnings is listed chronologically here.

The function **File ➔ Print as PDF** file can be used to save the complete error history as a PDF file.
After you select the respective PDF function, a dialogue is opened in which the name and the path of the saved PDF file can be indicated. The storage path is the standard directory for report files. The standard name is the addition 'Error history' followed by the test unit number, e.g.:

PDF file: Error-history Unit01.pdf

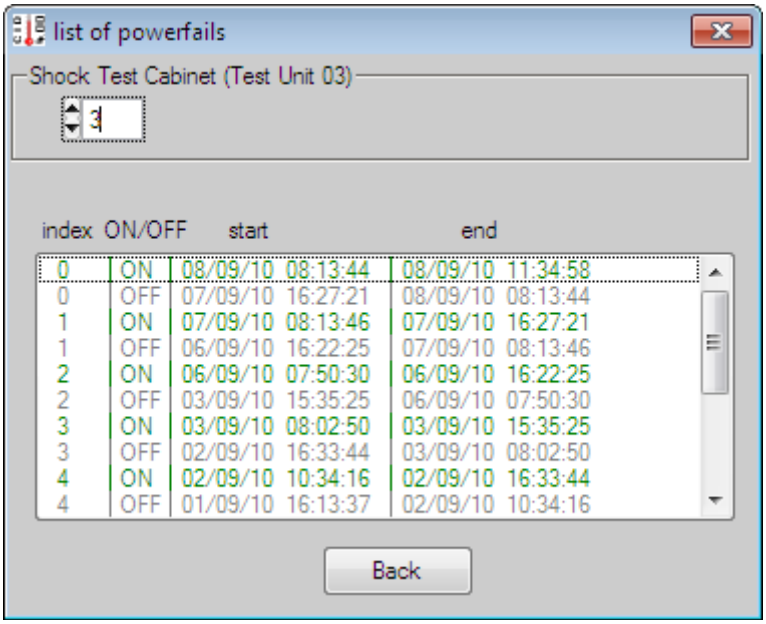
Back closes the error history window again.

Take note: If the “No reply from this test unit!” message is displayed in this window, this function is not yet implemented in your unit’s controller software.

The colour of the error (red) and warnings (orange) display can be activated/deactivated in the Options (cf. sec. 4.9.3.9 - Options (event log), page 135).

4.9.3.7 Power fail

The **power fail** menu option shows a list of all power failures detected in the chosen test unit.



The list is displayed with a maximum of ten entries with the periods within which the test unit was switched on or off. For the controller, the ON/OFF switching of the unit's main switch is considered as a power failure.

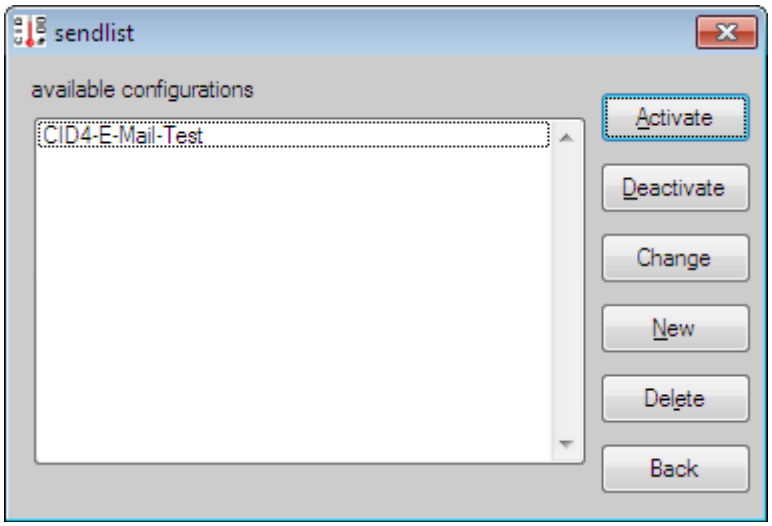
Back closes the power-failure list window again.

Take note: If the "No reply from this test unit!" message is displayed in this window, this function is not yet implemented in your unit's controller software.

4.9.3.8 E-Mail message

The **E-Mail message!** menu option enables setting and activation of the e-mail messages, which **CID-Pro 4.02** software sends automatically.
You need internet or local network access and an SMTP server that supports message dispatch to be able to use this function. The potential to send e-mail depends heavily on the available network.

The **E-Mail message!** menu option opens a send list window using the existing send configuration, here **CID4-E-Mail-Test**:



All stored send configurations are shown:

- **Black** entries are **not activated**.
- **Green** entries are **activated** and send e-mails for the appropriate events.

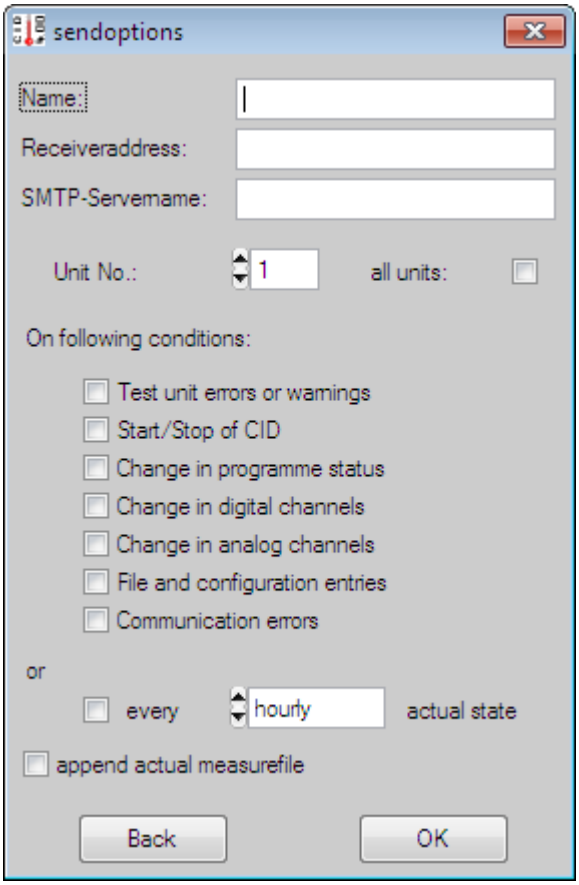
New send configuration:

You use **New** to save a new send configuration. The necessary information is entered in this window and the events established for which an e-mail will be sent:

- **Send configuration name**
  (freely selectable)
- **Receiver address**
  (receiver's e-mail address)
- **SMTP server name**
  (consultation with the network administrator)
- **Unit number / all units**
  (monitoring of a particular unit or of all units)
- **Conditions**
  (incidents triggering an e-mail dispatch)
- **Cyclic current status**
  (Cyclic instants triggering the e-mail dispatch and sending the current test unit's status:
  - monthly
  - weekly
  - daily
  - hourly

  The currently running recording can be optionally also sent along.)

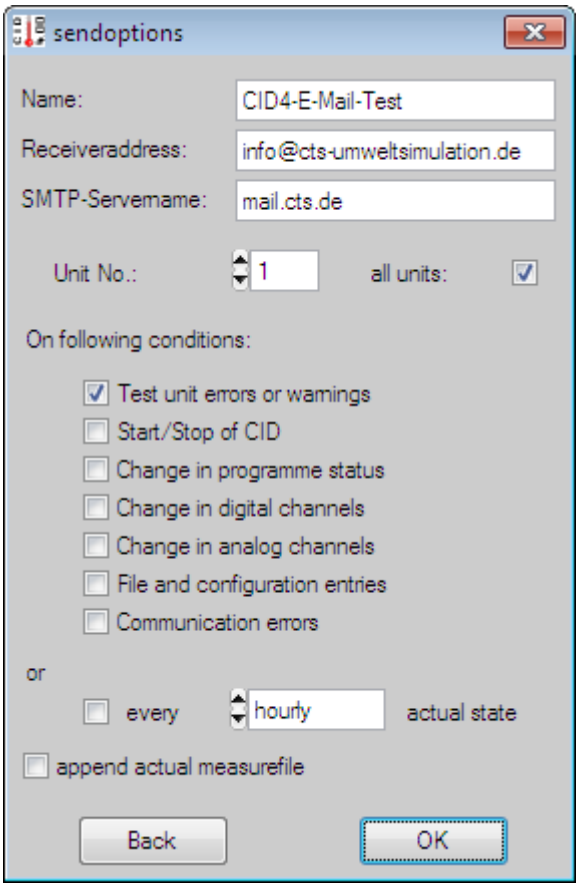
Back ignores the adjustments.
OK accepts them
➔ but they are not yet activated.



Changing a send configuration:

You can adjust the existing send configuration by marking and **change** it.

Back ignores the adjustments.
OK accepts them
➔ but they are not yet activated.



Please note:

A correct sender is precondition on some systems (cf. sec. 4.2.5 - Configuration: Generally - Options - Sender Address, page 44).

You can get the name of your SMTP server from your network administrator!

Deleting a send configuration:

You can remove a selected send configuration by marking it and using **Delete**.

Take note: **Deleted send configurations are irrevocably lost!**!!

Activating and deactivating a send configuration:

You can use **Activate** to activate the marked send configuration. The send configuration is displayed in green script.

CID4-E-Mail-Test

You can use **Deactivate** to deactivate the marked send configuration. The send configuration is once again displayed in black script.

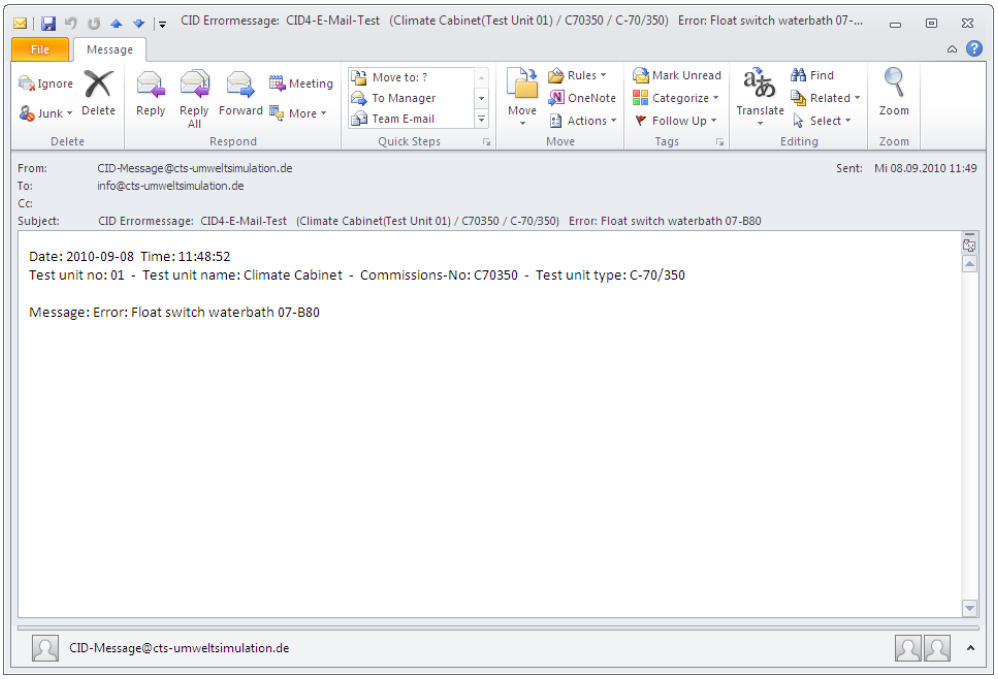
CID4-E-Mail-Test

Several send configurations may be active.

Take note: Selecting certain send configurations can cause a large number of e-mails can be dispatched. This information flood can be unpleasant for the receiver.

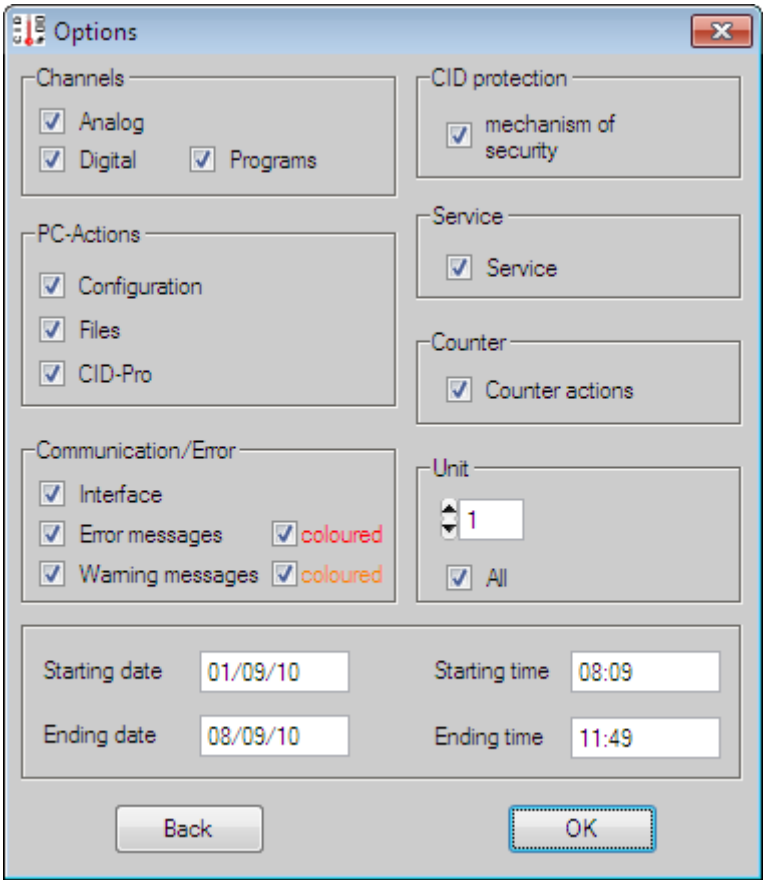
Example of an e-mail message for a test unit error:

Subject: **CID Errormessage: CID4-E-Mail-Test**
(Climate Cabinet(Test Unit 01) / C70350 / C-70/350)
Error: Float switch waterbath 07-B80



4.9.3.9 Options (event logs)

The report file display is adjusted with the options. You can filter out the messages, which you do not want to see, or check mark messages, which should be displayed:



By deactivating individual entries like analogue channels, they will be filtered out. The report files display making the list clearer.

The option **coloured**, for error and warning messages, indicates the errors as red and warnings as orange in the Report menu.

It can also be distinguished whether all units (All) or only a particular unit (here unit 1) should be shown.

Furthermore, you can provide the time range in which messages should be shown. Observe the specified date and time format. If you do not enter any values for stop time or date, then all entries will be shown beginning with the start time and date up to the last entry.

Please note:

Entries: 650/854

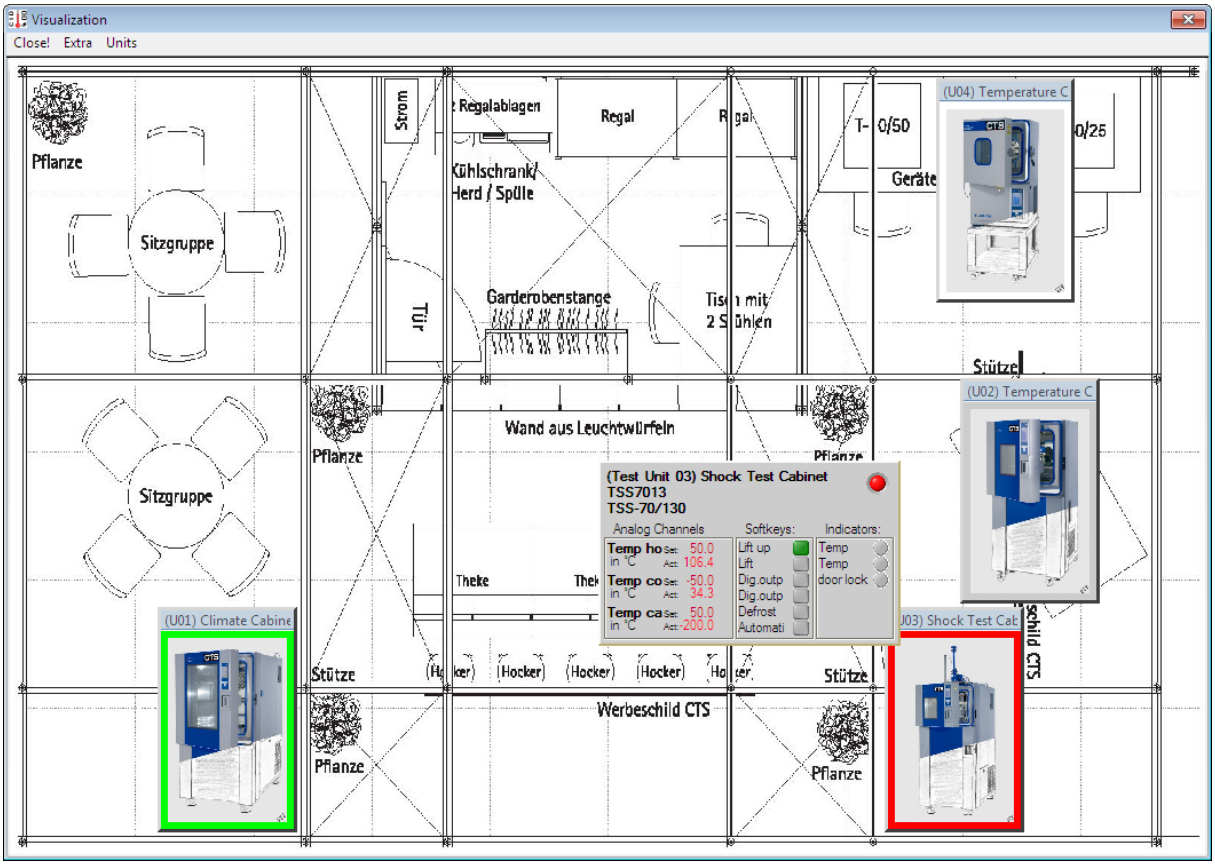
Depending on which messages have been commented on, it is sometimes possible that no messages will be displayed any more.
The information about the number of **current entries / total entries** in the report window gives you a rapid overview of how many messages have been commented on and how many messages are contained in the complete report file.

The new settings become active after confirmation with **OK**. These are saved and reused the next time the report menu is opened.
You can ignore the changes with **Back**.

4.10 Visualization

4.10.1 Preface

With the new menu, you have the potential to visually present your unit‘s surroundings using background image and individual unit images. User defined settings determine the size, position, and appearance of test units.



4.10.2 Buttons

Menus	*Symbol*	*Submenus*	*Key combi-nation*	*Reference*
Close!				Exit visualization
Extra		**Configuration**	**Ctrl+C**	Configure setting cf. sec 4.10.4.1, p. 139
		Load Settings	**Ctrl+L**	Load setting cf. sec 4.10.4.3, p. 142
		Save Settings	**Ctrl+S**	Save setting cf. sec 4.10.4.2, p. 141
		Reset Settings	**Ctrl+R**	Reset setting cf. sec 4.10.4.4, p. 142
Units		*Units*		Test unit display cf. sec 4.10.4.5, p. 142

4.10.3 Display the Visualization

Each unit possesses a unit designation (here (U01) Climate Cabinet) and a coloured frame indicating the test unit's status.

Various unit types are presented on the right side:

This status description is analogue to the unit's presentation in the status overview, cf. sec. 4.1.3 - Test Units, page 21.

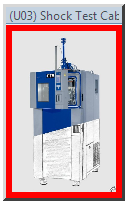
White frame:
Test unit
doesn't answer

Gray frame:
Test unit
connected
not started

Green frame:
Test unit
connected
in operation

Orange frame:
Test unit
connected
in operation
Pause

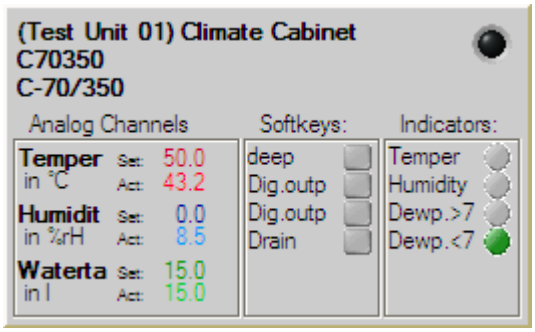
Red frame:
Test unit
connected
error present



Yellow frame:
Test unit
connected
warning present

No representation:
Test unit
not configured

Moving the mouse over the test unit displays the most important information:

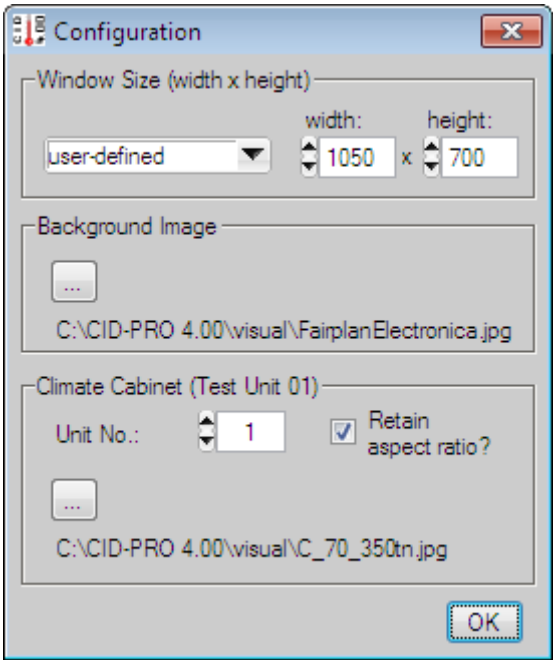


Unit number (Test Unit 01), unit name (Climate Cabinet), commission number (C70350), unit type (C-70/350), analogue channels and digital channels (Softkeys and indicators).
The LED in the upper right turns red when there is an error at this test unit. The entire window turns green when the test unit is started. If a program is running in program mode, its path is displayed.

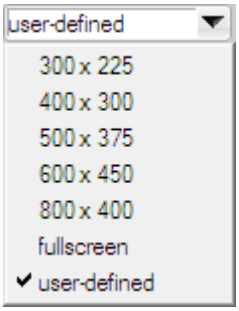
4.10.4 Visualization functions

4.10.4.1 Configure setting

You can make changes to the display in the visualization configuration:



Window Size (width x height):



You can select window sizes from the adjacent specifications. For example, if you select a fixed size of 800 x 400 pixels, the values appear, and are greyed out, in the width and height fields.
Full screen maximizes the window and also sets and greys out the values in the width and height fields.
The user-defined function clears the width and height fields into which you can enter the desired values.

Take note: Changes are accepted **immediately**!

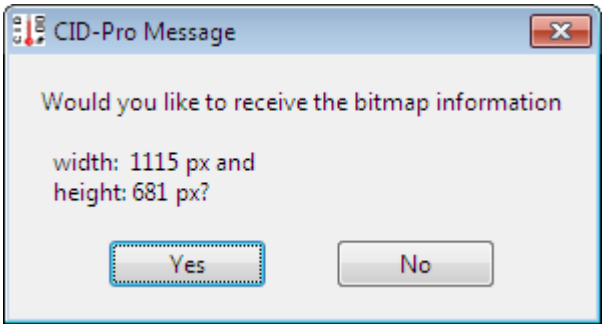
Background Image:

You can select the background image as a bitmap or jpg file with the ... button. The successfully selected image is shown as a path name below the button.

You can use your work place's, laboratory's, or production hall's layout chart as the background as well as bitmap or jpg files you design and construct yourself. Since the properties of the image in this file rarely agree with those of the screen, it makes sense to adjust the background image's window sizes (width x height).

Either you enter the dimensions yourself in to the width and height fields, or you give your image file the dimension information via a name change. This change works as follows:

- Create your image file in bitmap or jpg format,
  e.g. **FairplanElectronica.jpg**
- This file is 1115 pixels wide and 681 pixels high.
- Name the file in the way to (Name_www_hhhh.jpg):
  e.g. **FairplanElectronica_1115_0681.jpg**.
- If you now load this file, this width and height information is processed and you will be asked whether you want to accept the values:



- NO leaves all values unchanged.
- YES accepts the new values and changes the window's sizes.

Take note: Width and height pixel values must be **four-place**. That means they must be padded with 0s if necessary.
Dimension information must be completed in the format **_wwww_hhhh**. The underscore signals the entry of dimensional information to the system.
Consequently, **no further underscores** are permitted in the rest of the name.

Test Units:

Here you can select your own unit image for each test unit. Go to the desired test unit with the Unit No. As orientation, the section captions change when the unit designation is entered, e.g. Climate Cabinet (Test Unit 01).

You can use the ... button to select a bitmap or JPG file which can be used as an image for the selected test unit. The successfully selected image is displayed as a path under the button.
The **aspect ratio** option is related to all the test units and enables you to show the image in the saved dimensions or not when loading the image.
If the option is set, the aspect ratio between width and height remains the same if you change the size of the image ➔ there is no distortion.
If the option is not set, you can change the size of the unit images as you wish ➔ the images will distort.

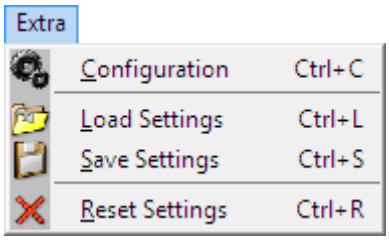
The option can also be set afterwards. The properties are corrected in this case only during the next image change.
If you change an image, the smallest page is set the largest page recalculated when the option is selected.

Original image: **Change:** **Option:** **Result:**

4.10.4.2 Save setting

For different presentations, you have the option to store the adjusted configuration's setting.

Go to the **Extra ➔ Save Settings** menu option and enter a characteristic name for the file name. The file extension is *.vcg (**v**isual **c**onfi**g**uration).



4.10.4.3 Load setting

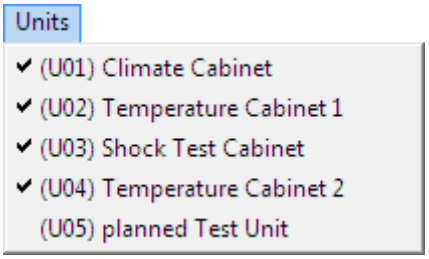
You can reload the various saved configurations at any arbitrary time.
Go to the **Extra ➔ Load Settings** menu option and select the vcg file that you want to load. The setting is accepted after confirmation and the visualization is completely reconstructed.

4.10.4.4 Reset setting

If you want to begin a configuration again from scratch, choose the **Extra ➔ Reset Settings** menu option. The saved settings are reset, i.e. all image paths, dimensions, and positions are set back to the default values.

4.10.4.5 Display Test Units

The displayed test units from the program configuration (cf. sec. 4.2.1 - Configuration: Settings: Number of test units, page 35) are all listed with designation of the unit's name and number (e.g. (U01) Climate Cabinet):



All test units are checked on by default, i.e. shown, here.
Select a test unit in the menu if you want to hide it in the visualization. The unit will no longer be displayed ➔ Check mark in front of entry is no longer set.

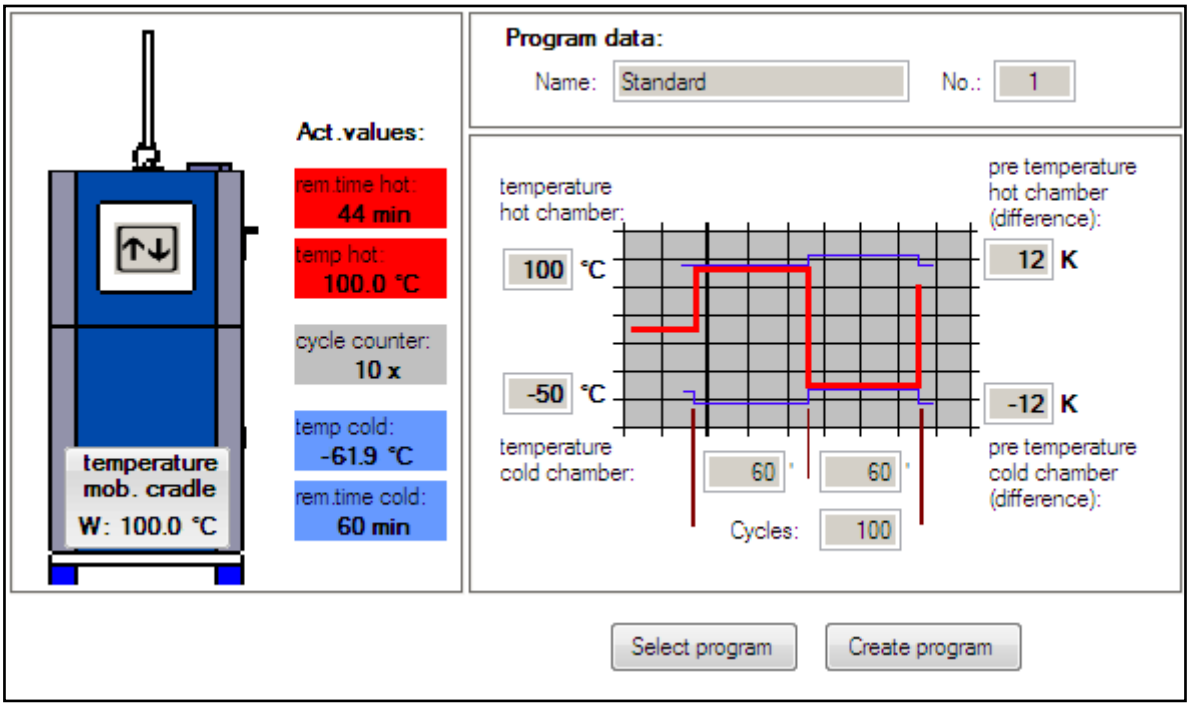
Test units that are not configured, are not checked on and there is no possibility to change this state.

4.11 Special menus for particular test unit types

4.11.1 Temperature Shock Test Cabinets

The shock test cabinet is a special test unit type in which very fast temperature changes can be created. The temperature changes are not achieved by changing a zone's temperature, but by moving the test specimen from one temperature zone to another. Its own menu is provided for this special function. With its help, test programs can be created for this test unit type.

4.11.1.1 Overview menu



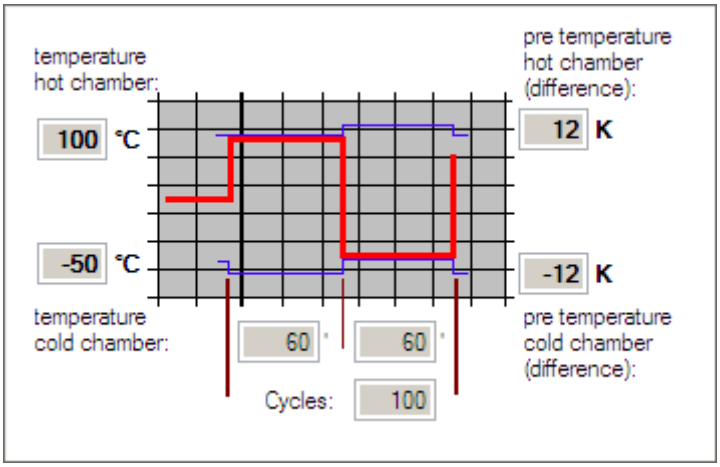
The unit is symbolically represented in the left area. The arrow icon shows the cradle position, here on top. The cradle's temperature is given below as long as your shock test cabinet has a cradle sensor (external PT100).
If the shock test cabinet does not have a cradle sensor, the cradle temperature is shown as the warm-chamber temperature when the cradle is located in the upper chamber and as the cold-chamber temperature, when the cradle is located in the lower chamber. Cradle temperature data then appears as follows:

Warm chamber / upper chamber	**W: 100.0 °C**
Cold chamber / lower chamber	**C: -61.9 °C**

The current actual values are shown to the right next to the unit:

- Remaining cradle delay time in the warm chamber above and its actual temperature ➔ red fields
- Already completed cycles ➔ grey field
- Actual cold-chamber temperature below and remaining cradle delay time in this zone ➔ blue fields

Program data are shown in the area to the right.
This is the program name and number (= program location in the controller) as well as a graphical presentation of the test cycle with the programmed benchmark values:

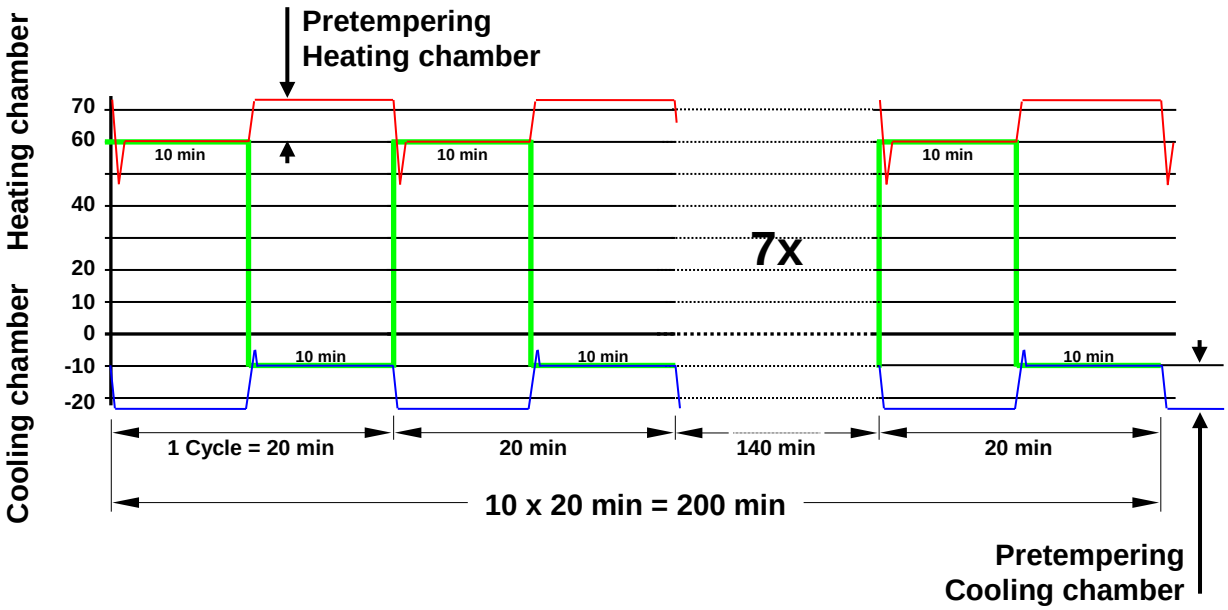


- **Temperature warm chamber:** (left above) — Temperature set value in the warm chamber
- **Temperature cold chamber:** (left below) — Temperature set value in the cold chamber
- **Pre tempering warm chamber (difference):** (above right) — This temperature value is added to the warm chamber's set value. The warm chamber heated to this temperature sum when the cradle is not located in this zone.
- **Pre tempering cold chamber (difference):** (below right) — This temperature value is added to the cold chamber's set value. The cold chamber is heated to this temperature sum when the cradle is not located in this zone.
- **Time warm chamber:** (left lower center) — Time the cradle spends in the warm chamber in minutes
- **Time cold chamber:** (left lower center) — Time the cradle spends in the cold chamber in minutes
- **Cycles:** — Number of warm chamber cold chamber cycles

4.11.1.2 Pretempering

When the cradle moves into a chamber, the ambient temperature in that chamber is altered. The size of this alteration depends on the chamber temperature, the cradle and the items to be tested as they enter into the chamber. In order to return to the desired target value as quickly as possible after the cradle change, the heating chamber is heated up to a certain value above the target-value, prior to the change. Conversely, the cooling chamber is cooled down to a certain value below the target-value, prior to the change.
These values are defined as **pretempering**. The value is positive for the heating chamber (pretempering heating chamber - **DiffTemHo**) and for the cooling chamber it is negative (pretempering cooling chamber - **DiffTemCo**).

These variable pretemperings are analogue channels, so that they can be optimized for the target-values entered and, particularly, for the mass of the item to be tested. (Changes in the analogue channels: cf. sec. 4.1.10 - Analogues channels, page 31).



Comments regarding this diagram:

- The thick reference line, which varies within the range of +60°C to -10°C, represents the target-temperature for the **cradle.**
- The thin reference line in the upper-half of the schematic illustration represents the temperature-development in the **heating chamber.** It varies within a range from approximately +45°C to approx. +72°C. The different values have the following meanings:
  - +60°C: Target temperature (= current-temperature) of the heating chamber with the cradle.
  - +72°C: +60°C + 12K (target-value + entered pretempering)
  - +45°C Temperature shortly after the cold cradle has entered into the heating chamber. The temperature in the chamber sinks.
- The thin reference line in the lower half of the schematic illustration represents the temperature development of the **cooling chamber.** It varies within a range from approx. -22°C to approx. -5°C. The different values have the following meanings:
  - - 10°C: Target temperature (= current temperature) of the cooling chamber with the cradle.
  - - 22°C: -10°C + (-12K) (target-value + entered pretempering)
  - - 5°C Temperature shortly after the warm cradle has entered into the cooling chamber. The temperature in the chamber rises.

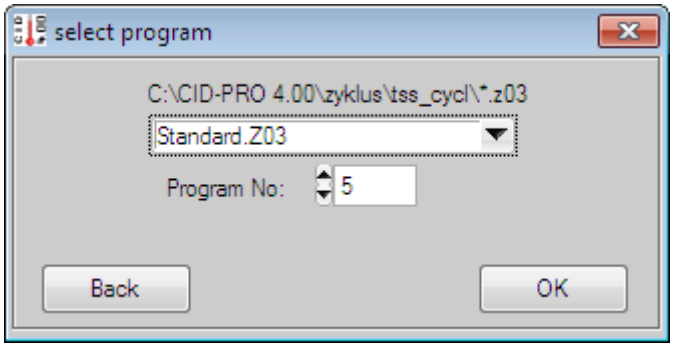
Notice:

The pretempering should (if possible) be selected in such a way that the alteration of temp (in this case, +45°C or -5°C) during the appearance of the cradle into the respective chamber corresponds to the temperature target-value.

Additional screens are called up with the buttons Select program (cf. sec. 4.11.1.3 - Program start, page 146) and Create program (cf. sec. 4.11.1.4 - Test program creation, page 147).

4.11.1.3 Program start

The Select program button opens a window for selecting program name and number.



The unit controller has available program locations 1 to 97. The test program is stored in the controller at the program location chosen here.
Only the programs from the program cycles' shock test default directory are selectable. This subdirectory is named as follows:

*CID-installation-path**zyklus***tss_cycl**

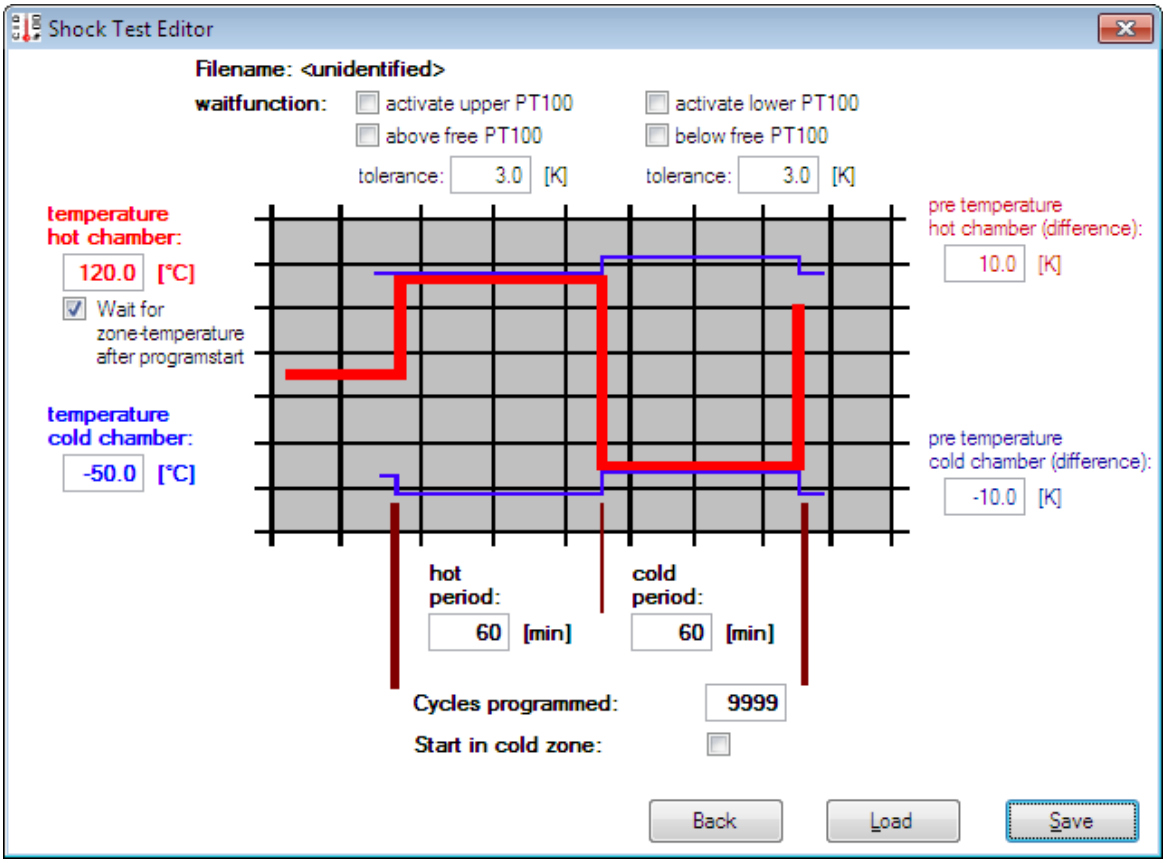
e.g.: C:\CID-PRO 4.00\zyklus\tss_cycl

Clicking **OK** transmits the selected program to the desired program location in the controller and started.
Clicking **Back** interrupts the operation.

Take note: A test program possibly already stored there is **overwritten**.

4.11.1.4 Test program creation

Clicking the Create program button opens a window for the simple entry and storage of shock test cabinet test programs.



The shock test editor shows an image similar to the overview of the programmed shock test program. For this form of input, a “normal” test program is created in the background, which can be reworked with the editor (cf. sec. 4.4 - Test-cycle program editor, page 57) for special requirements (e.g. switching digital outputs). This is not necessary in the default case.
The entry allows very quick and clear test program creation for the shock test cabinet.

- Entries for **temperatures**, **pretemperings**, **delay times**, and **cycle number** are the set values of the test program.
- **Wait for zone temperature after program-start** is inserted by check marking a wait function in the program. The program waits until the warm chamber has reached its set temperature with a tolerance of 3K before beginning the first cycle.
- **Wait function activate upper PT100** inserts a wait function for each cold/warm cycle when check marked. Delay time in the warm chamber only begins to elapse when the tolerance range (here 3K) entered for the **warm chamber’s temperature sensors** is entered. The temperature must approach the zone from below.
- **Wait function above free PT100** inserts a wait function for each cold/warm cycle when check marked. Delay time in the warm chamber only begins to elapse when the tolerance range (here 3K) entered for the **free PT100 temperature sensors** (option) is entered. The temperature must approach the zone from below.

- **Wait function activate lower PT100** inserts a wait function for each warm/cold cycle when check marked. Delay time in the cold chamber only begins to elapse when the tolerance range (here 3K) entered for the **cold chamber's temperature sensor** is entered. The temperature must approach the zone from above.
- **Wait function below free PT100** inserts a wait function for each warm/cold cycle when check marked. Delay time in the cold chamber only begins to elapse when the tolerance range (here 3K) entered for the **free PT100 temperature sensor** (option) is entered. The temperature must approach the zone from above.

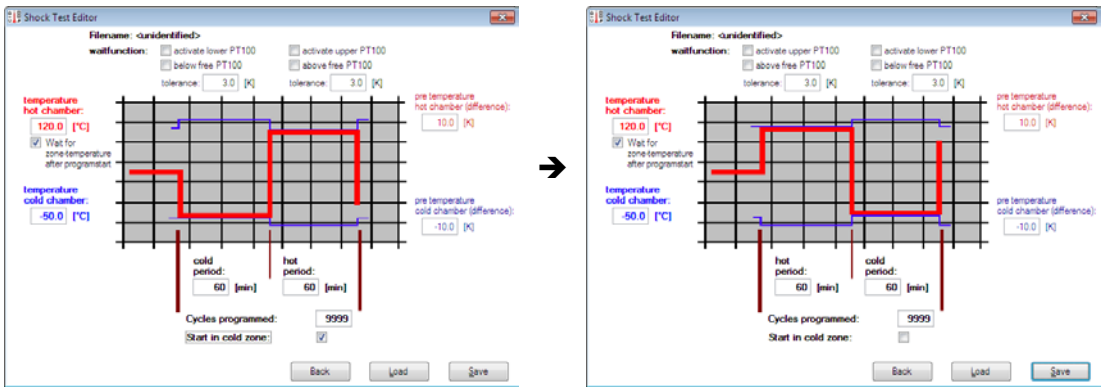
Wait function use increases the test duration. The waiting time depends on the set tolerance and the chamber's load.

If wait functions are not activated, the test program's run time begins to elapse independently of the actual values in the chambers.

Save saves the set cycle under a freely selectable name.

Load can load, edit, modify, and, with resave an already created cycle or back it up under another name.

When the selection "Start in cold zone" is made, the graphic display also changes:



4.11.1.5 Manual and program operation

For general standard temperature or climate test units, manual operation is started by activating the start/stop button in the status overview (cf. sec. 4.1.5 - Unit and error status, page 23).

If you start the shock test cabinet with this start/stop button, program operation, i.e. the default shock test program, starts by default in storage location 99.

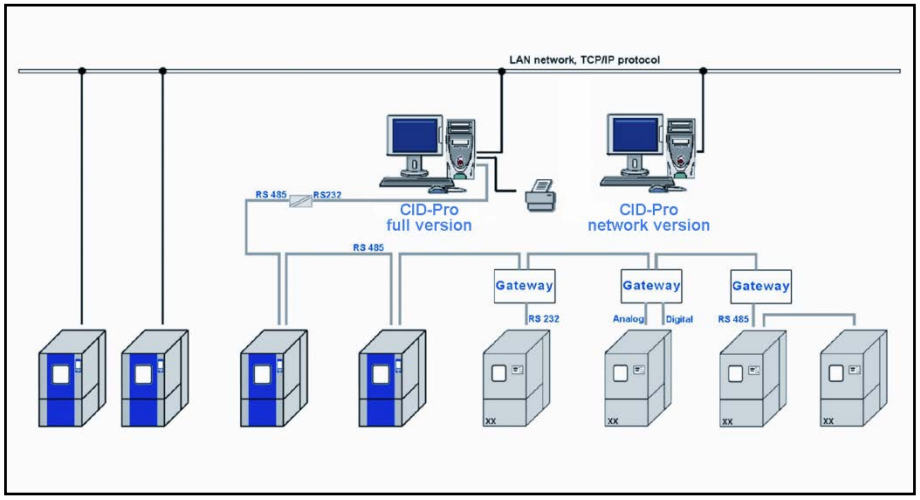
If you want to change this situation and start the shock test cabinet in true manual operation, you must deactivate the "**automatic**" digital channel visible only in the CID-Pro 4.02 software, but not on the unit's hand set.

This "**automatic**" channel has the following significance:

automatic = 1	Start the software from the default shock test program.
automatic = 0	Start the software manually (Here the cradle can only be moved manually)

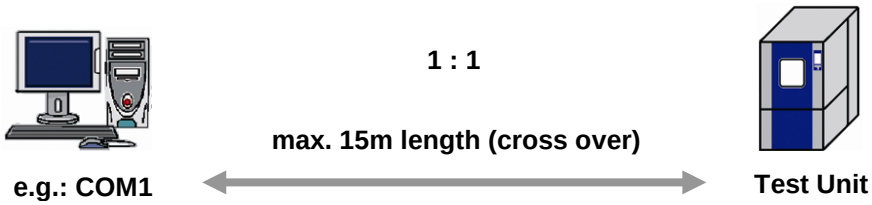
5 Networking

The following are possibilities when networking the test units:



Several units are connected to a full CID-Pro 4.02 version with a local printer.

5.1 Serial interface (RS 232)

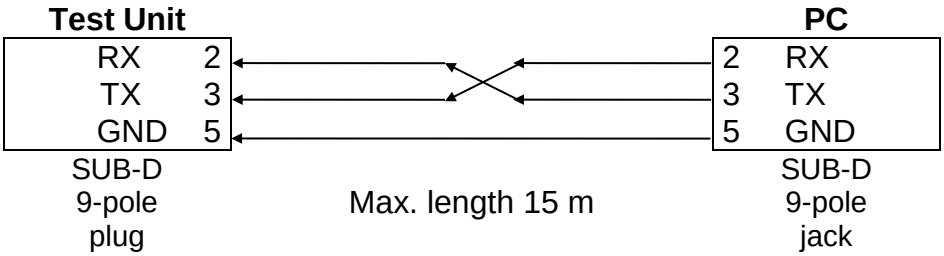


Connect the unit to the user PC with a serial RS232 interface cable. The cable must be a **crossover**.

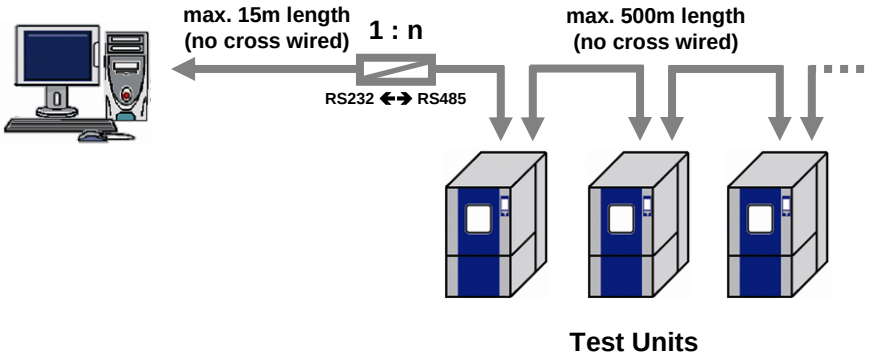
- Set the unit address if required in the unit configuration on the seven-segment operating panel using the key sequence **E - P - P**, or using the touch screen operating panel you can set the unit address and the parameters for the serial interface under **Mainmenue 2/3 ➔ Settings ➔ Interfaces**.
  These must conform with:
- You should set the same parameters for the serial interface in the configuration of the CID-Pro 4.02 software (cf. sec. 4.2.2 - Communication: Serial interface, page 37). In addition to this, note the COM port number of your PC.

This means you can only connect one test unit to each of your PC's COM ports.

Interface cable:



5.2 Serial interface (RS 485)



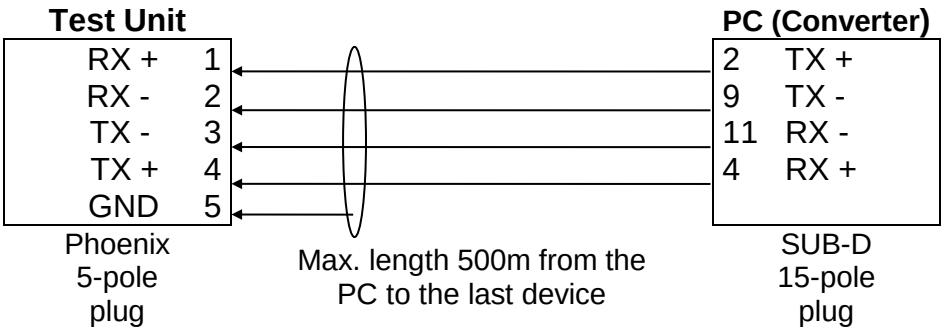
If you wish to operate several units in series to one serial COM port, or have longer cable lengths, you will require the RS485 interface. To do this, you will need the RS232 to RS485 interface converter.
Connect the user PC and the interface converter (RS232 to RS485) with a serial RS232 interface cable (SUB-D adapter cable, 9-pole/25-pole, socket/plug). The cable must be a **non-crossover**.
Then connect the interface converter (RS232 to RS485) and the first unit using a RS485 interface cable. The cable must be a **non-crossover**.
You can now connect the first and the next unit using a second **non-crossover** RS485 interface cable. Now continue to connect all the units.

- Set the unit address if required in the unit configuration on the seven-segment operating panel using the key sequence **E - P - P**, or using the touch screen operating panel you can set the unit address and the parameters for the serial interface under **Mainmenue 2/3 ➔ Settings ➔ Interfaces**. The important thing is that all **unit addresses** for each unit are **different**.
  The settings must conform with:
- You should set the same parameters for the serial interface for all connected units in the configuration of the CID-Pro 4.02 software (cf. sec. 4.2.2 - Communication: Serial interface, page 37). In all connected units, the COM port in the configuration is the same. The units are **differentiated** only of the **unit address**.
  In addition to this, note the COM port number of your PC.

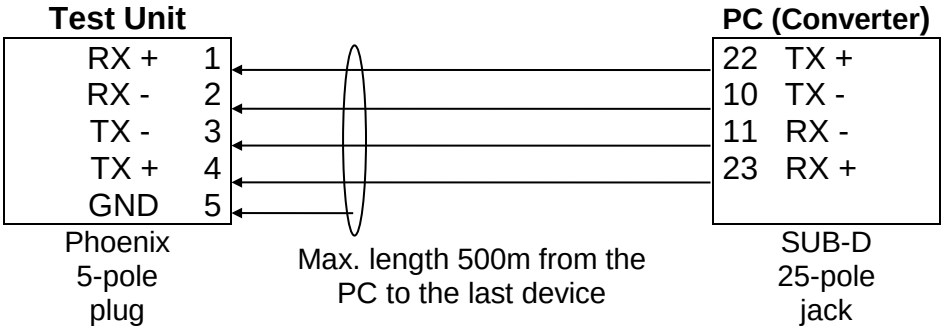
Interface cable:
Connecting cables are to be built as shielded, 4-conductor cables like LIYCY 4x0.25 mm².

Connecting cable: Test Unit - PC (RS485-RS232 converter)

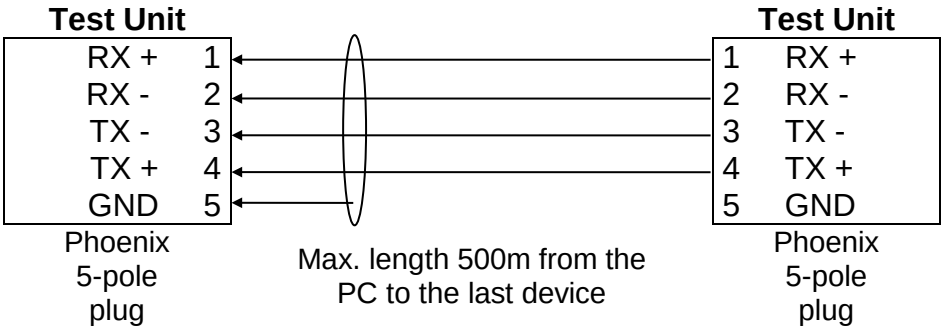
1. Phoenix PSM V24/V11



2. W&T Nr.: 86000

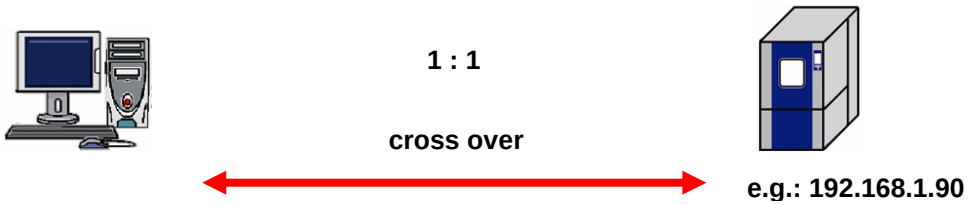


Connecting cable: Test Unit - Test Unit

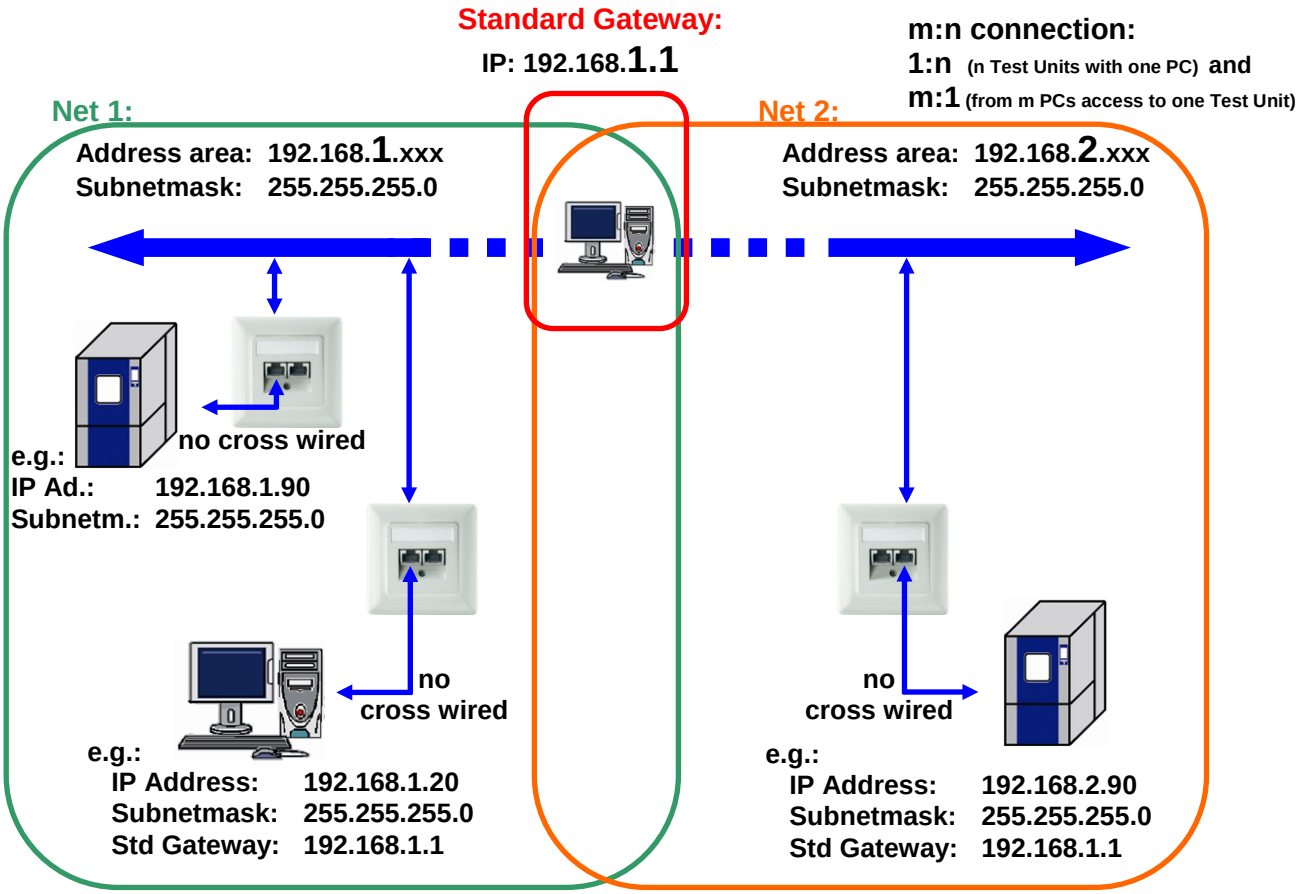


5.3 Network (TCP/IP)

- **Either:**



- **Or:**



CID-Pro 4.02 software offers the possibility of networking over an integrated corporate network. A LAN (Local Area Network) with a correctly installed TCP/IP protocol is prerequisite. **CID-Pro 4.02** software establishes communication with a fixed IP address. This can lead to problems in networks with dynamic address assignment DHCP (Dynamic Host Configuration Protocol).

Connect the test unit to a free network outlet with an RJ45 patch cable.
Connect your PC to a free network outlet with an RJ45 patch cable.
Your network administrator must activate the network outlet and the cable must be a **straight-through** patch cable.

- If required, go to **Mainmenue 2/3 ➔ Settings ➔ Network** on the touch screen operating panel in the units configuration to set the parameters for the Ethernet interfaces. (Units with 7-segment operating panels do not have an Ethernet interface). These must conform with:
- You should set the same parameters for the Ethernet interface in the configuration of the CID-Pro 4.02 software (cf. sec. 4.2.2 - Communication: Ethernet interface, page 37).

You must request the required parameters (IP address, IP port, subnet mask, and default gateway) from your network administrator. IP address information is unique within the network, meaning that it may only be assigned once.

5.4 Network Version (Remote PC)

A second PC can be connected using the company-integrated LAN network (Local Area Network). Here the CID-Pro 4.02 network version which can be used to observe current conditions of all the units connected is running. This takes place using the standard CID-Pro 4.02 software interface. Please cf. sec. 4.2.2 - Communication: Client/Server Setting, page 37 for setting this type of operation in accordance with client/server model

5.5 External devices

It is possible to integrate external devices with CID-Pro 4.02 software.
These external devices from other manufacturers are addressed by means of a protocol converter (a so-called gateway (hardware)). Gateways convert different units' interfaces in a way so that the devices appear to be CTS devices.
Beyond this, there is a special version of CID-Pro 4.02 software that can integrate the external devices using software.

You can determine which solution, hard or software, is right for you directly from CTS GmbH's technical department.

6 Buttons of the CID-Pro 4.02 software

6.1 Status overview

Symbol	Description + Link	Key combination	Reference
	Exit		Exit!
	Visualization (section 4.10, page 137) Display your test units in a self-generated environment.	**Ctrl+V**	Functions
	Overview of all test units (section 4.3, page 55) Display all your connected test units in overview.	**Ctrl+O**	Functions
	Test-cycle program editor (section 4.4, page 57) Create, edit, change, and delete your test-cycle programs.	**Ctrl+E**	Functions
	Graphical measurement-data analysis (section 4.5, page 91) Display your test data in a diagram and analyze them.	**Ctrl+G**	Functions
	Starting test programs (automatic) (section 4.6, page 111) Start a test-cycle program from CID-Pro 4.02 in automatic mode.	**Ctrl+A**	Functions
	Manual measurement recording (section 4.7, page 117) Document the progress of analogous and digital channels' test units with test value records.	**Ctrl+M**	Functions
	Configuration (CID-Pro 4.02 - Settings) (section 4.2, page 35) Configure your software to meet your needs.	**Ctrl+S**	Functions
	Operating hours and event counter (section 4.8, page 123) Display your operating hours and events.	**Ctrl+C**	Functions
	Event logs (reports) (section 4.9, page 125) All changes, warnings, and errors can be displayed and provided with comments.	**Ctrl+R**	Functions
	Help	**F1**	Help
	Info **Software information** (section 7.2, page 160)	**Ctrl+I**	Information

6.2 Editor

Menus	Symbol	Submenus		Also in tool bar	Key combination	Reference
File		New ...		X	Ctrl+N	New test program cf. sec 4.4.4.1, p. 69
		Open...		X	Ctrl+O	Open test program cf. sec 4.4.4.2, p. 69
		Save		X	Ctrl+S	Save (as) test program cf. sec 4.4.4.3, p. 70
		Save As		X	Ctrl+A	
	---	Printer/Page install			Ctrl+I	Printer/page setup and print … cf. sec 4.4.4.5, p. 71
		Print...	Print Graphic		Ctrl+G	
			Print List		Ctrl+L	
			Print Both		Ctrl+B	
			Print Screen		Ctrl+T	
		Print as PDF…	Print Graphic as PDF			Print as PDF... cf. sec 4.4.4.6, p. 72
			Print List as PDF			
			Print Screen as PDF			
	---	*Files last opened*				*Open test program (4.4.4.2)*
		Exit		X	Ctrl+E	Exit the editor
Edit		Insert Line		X	Ins	Edit lines (insert, change, delete, cut, and copy) with keyboard/menu functions cf. sec 4.4.3.1, p. 60
		Delete Line		X	Del	
		Cut Line		X	Ctrl+X	
		Copy Line		X	Ctrl+C	
		Paste Line		X	Ctrl+V	
		Block copy/insert ...			F6	Block of lines cf. sec 4.4.4.7, p. 72
		Block delete ...			F7	
		Insert Start of Loop		X	F2	Loop (loop beginning and end) cf. sec 4.4.4.8, p. 74
		Insert End of Loop		X	F3	
		Call Subprogram		X	F4	Call Subprogram cf. sec 4.4.4.9, p. 75
		Insert Conditional Jump		X	F5	Conditional jump cf. sec 4.4.4.10, p. 76
		Insert Program		X	F10	Insert Program cf. sec 4.4.4.11, p. 77
		Refresh			F11	Refresh the editor
Templates		Templates				Templates cf. sec 4.4.4.12, p. 78
Extras		Options			Ctrl+P	Options (editor) cf. sec 4.4.4.13, p. 79
		Delete Program			Ctrl+D	Delete test program cf. sec 4.4.4.4, p. 70
		Gradient ...	...with (Valued Calculation)		F8	Set Gradient cf. sec 4.4.4.14, p. 82
			...to (Time Calculation)		F9	
		Save File in Data pool ...			Ctrl+F	Save file in data pool cf. sec 4.4.4.15, p. 86
		Save File as Library ...				Save file as library cf. sec 4.4.4.16, p. 86
		Delete Template(s) / Library(ies)				Delete Templates and Libraries
Comment!						Comment (editor) cf. sec 4.4.4.17, p. 87
		Zoom functions				Zoom functions (editor) cf. sec 4.4.4.18, p. 88

6.3 Graphical measurement-data analysis

Menus	Symbol	Submenus	Also in toolbar	Key combi-nation	Reference
File		Open...	X	Ctrl+O	Open and load measurement cf. sec 4.5.3.1, p. 93
		Delete	X	Ctrl+D	Delete measurement cf. sec 4.5.3.3, p. 95
		Print	X	Ctrl+P	Print measurement cf. sec 4.5.3.4, p. 96
		Print as PDF	X	Ctrl+F	Print measurement as PDF cf. sec 4.5.3.5, p. 96
	---	*Files last opened*			*Open and load measurement (4.5.3.1)*
		Exit	X	Ctrl+E	Exit the graphical measurement-data analysis
Zoom		Complete Frame/Restore	X	Ctrl+R	Zoom functions (graphical measurement-data analysis) cf. sec 4.5.3.6, p. 97
		Zoom Out	X	Ctrl+U	
		Zoom	X	Ctrl+Z	
		Zoom to cursor positions	X	Ctrl+S	
View		Display		Ctrl+I	Display cf. sec 4.5.3.7, p. 99
		Analysis		Ctrl+A	Analysis cf. sec 4.5.3.8, p. 99
Extra		Options	X	Ctrl+T	Options (graphical measurement-data analysis) cf. sec 4.5.3.9, p. 100
		Convert to Excel - Program		Ctrl+X	Excel conversion program cf. sec 4.5.3.10, p. 103
		Display Measure-ment Value: completely			Display Measurement Values cf. sec 4.5.3.11, p. 106
		Display Measure-ment Value: cursor position			
		Copy to Clipboard		Ctrl+C	Copy to clipboard cf. sec 4.5.3.12, p. 106
		Join Measurement Files		Ctrl+M	Merge measurement files cf. sec 4.5.3.13, p. 107
		Cut current Measurement File (Cursor)			Cut current Measurement File (Cursor) cf. sec 4.5.3.14, p. 107
Settings		Setting 1	X		Settings cf. sec 4.5.3.15, p. 108
		Setting 2	X		
		Setting 3	X		
		Setting 4	X		
		Setting 5	X		
		Setting 6	X		
		Setting 7	X		
		Setting 8	X		
		Setting 9	X		
		Setting 10	X		
		New Setting			
		Delete Setting			
Help		Help		F1	
Comment!					Comment (graphical measurement-data analysis) cf. sec 4.5.3.16, p. 110

6.4 Event logs

Menus	*Symbol*	*Submenus*	*Key combi-nation*	*Reference*
File		**New**	**Ctrl+N**	New report cf. sec 4.9.3.1, p. 127
		Load	**Ctrl+L**	Load report cf. sec 4.9.3.2, p. 127
		Delete	**Ctrl+Del**	Delete report cf. sec 4.9.3.3, p. 127
		Print ... — **List completely**	**Ctrl+C**	Print report … cf. sec 4.9.3.4, p. 128
		Print ... — **List completely as PDF**		
		Print ... — **List filtered**	**Ctrl+F**	
		Print ... — **List filtered as PDF**		
		Export ... — **List completely**		Export report … cf. sec 4.9.3.5, p. 128
		Export ... — **List filtered**		
		Exit	**Ctrl+E**	Exit the event logs
Error list!				Error list cf. sec 4.9.3.6, p. 129
Power fail!				Power fail cf. sec 4.9.3.7, p. 131
E-Mail message!				E-Mail message cf. sec 4.9.3.8, p. 132
Extras		**Options...**	**Ctrl+O**	Options (event logs) cf. sec 4.9.3.9, p. 135
Help		**Help**	**F1**	

6.5 Visualization

Menus	*Symbol*	*Submenus*	*Key combi-nation*	*Reference*
Close!				Exit visualization
Extra		**Configuration**	**Ctrl+C**	Configure setting cf. sec 4.10.4.1, p. 139
		Load Settings	**Ctrl+L**	Load setting cf. sec 4.10.4.3, p. 142
		Save Settings	**Ctrl+S**	Save setting cf. sec 4.10.4.2, p. 141
		Reset Settings	**Ctrl+R**	Reset setting cf. sec 4.10.4.4, p. 142
Units		*Units*		Test unit display cf. sec 4.10.4.5, p. 142

8 End user license agreement

8.1 Copyright memo

CTS GmbH is not liable for technical or printing errors or defect in this manual, and also accepts no liability for damages which are caused directly or indirectly by the supplier, performance and usage of this material.

This document contains information protected by copyright which are subject to copyright law. All rights are reserved. This document may neither be copied nor otherwise reproduced either completely or in excerpts without the previous approval of CTS GmbH.
The software described in this document is subject to a license agreement. Usage and reproduction is only permitted in the context of this agreement.

8.2 License agreement

The following licence conditions apply to a software product and their usage rights as a supplement to our general terms and conditions, which can be downloaded from our home page:

The licence conditions are acknowledged by the orderer on acceptance of the delivery or service, at the latest when the software is installed.

CTS GmbH allows the orderer of the computer program and the associated documentation and subsequent amendments (hereinafter referred to as software) non-exclusive and non-transferable usage rights for internal use. Copyright, ownership and all other rights to the software including its copies remain with the manufacturer. The customer has no rights to receive the source code program.
It is possible that the software is protected by copy protection. Any bypassing of copy protection contained in the software is considered to be illegal.

Any reproduction of software, irrespective of which type or on which carrier, is illegal with the exception of backup copies explicitly labelled as such. This also applies to internal use, unless the reproduction is used for decompiling under the strict preconditions of the German § 69e UrhG laws. The orderer must ensure that the software is not accessible without previous written authorisation from CTS GmbH.

8.3 Warranty

The contractual parties agree that it is not possible to develop EDP programs which are free of errors for all application conditions.
The manufacturer guarantees that the software is not defective during the statutory warranty period. The software is considered defective if it does not fulfil the functions specified in the specification.
If such defects are present, the manufacturer has the right to improve or redeliver on his own decision. If, during a suitable time limitation, it is not possible for the manufacturer to rectify or bypass defects through supplementary performance, the orderer (allowing for statutory exceptional cases) can, on his choice, demand a reduction of the licence fee or cancel the licence agreement if it is not possible for the orderer to use the software in accordance with the contract.
If only insignificant details are present, the orderer only has the right to reduce the licence fee.

The above paragraphs contain concluding regulations with regard to the software warranty and exclude any other warranty claims.

CTS GmbH is only liable for damages which have not occurred to the article of sale itself only:
a) in the case of intent
b) in the case of gross negligence from the statutory representative or management
c) in the case of culpable injuries to life, body or health
d) in the case of defects which CTS has maliciously concealed or whose absence has been guaranteed by CTS
e) in the case of defects to the article of sale in so far as liability is present for personal or material damage on privately used articles is covered by the German Product Liability Act.

Further claims are excluded.

8.4 Place of fulfilment, place of jurisdiction, applicable law

Place of fulfilment for all claims resulting from business relationships is 72379 Hechingen, Germany.
Place of jurisdiction for all claims resulting from business relationships including those from exchange and cheques is the court in whose district our head office is located. We are, however, also entitled to claim against customers at their general place of jurisdiction.
The laws of the Federal Republic of Germany are exclusively applicable to all legal relationships between us and our customers. Application of the UN Purchasing Rights (CISG) and those of international private law is excluded.
If one individual regulation is or becomes ineffective, the effectiveness of all other regulations or agreements will not be affected. A suitable regulation will then apply instead of the ineffective regulation which most closely approaches the ineffective clause in the context of legally permissible possibilities.

9 Index

Authorizations 7
Buttons Overview
Editor 156
Event logs 158
Graphical measurement 157
Status overview 155
Visualization 158
Configuration 35
Access Configuration - In operation ... 53
Access Configuration - Settings 48
Adding Test Units 40
Administrator settings 49
Change password 47, 52
Change user 51
Client/Server Setting 38
Communication 36
Configure all test units 39
Configure Unit x 39
Default Directories 44
Ethernet 37
Generally 44
Insert user 50
Language 35
Length of trendgraph 37
Number of test units 35
Options 44
PDF Settings 54
Program mode 41
Scanning rate 36
Serial interface 37
Settings 35
Simple Password 46
Test communication 39
Test specimen protection 43
Unit designation 36
User logoff 53
User logon 53
Windows Size 45
End user license agreement
Copyright memo 161
License agreement 161
Place of fulfilment, place of jurisdiction, applicable law 162
Warranty 162
Event logs (reports) 125
Activating a send configuration 134
Buttons 127
Changing a send configuration 133
Comment lines 126
Delete report 127
Deleting a send configuration 134
Display line 126
E-Mail message 132
Error history 130
Error list 129
Load report 127
New report 127
New send configuration 133
Options 135
Power fail 131
Preface 125
Print report 128
Send list 132
SMTP Server 132
Graphical measurement-data analysis 91
Active record 94
Analogue channel 101
Analysis 99
Buttons 92
Channel 100
Comments 110
Copy to clipboard 106
Cursor 95
Cursor visible 102
Cut current Measurement File 107
Default 100
Default values 101
Delete measurement 95
Digital channel 100
Display 99, 102
Display Measurement Values 106
Evaluation 102
Excel conversion program 103
High detail 102
Merge measurement files 107
Open and load measurement 93
Options 100
Preface 91
Print measurement 96
Print measurement as PDF 96
Right scale 101
Searching for a measurement file 94
Settings 108
Show Real-Time 102
Show the evaluation (analysis) 102
Show the small Display 102
Working with graphical measurem. 95
Zoom functions 97
Installation 8
ASCII protocol 13
Full, network and demo version 10

Hardware key (dongle)..... 12
Manuals (Adobe Acrobat Reader)..... 14
Licensing notes..... 7
Manual measurement recording
Append a measurement..... 118
Cyclic storage..... 119
Record options..... 117
Recording all ... seconds..... 117
Start options / Start at... 119
Starting a recording 117
Stopping a recording..... 122
Networking..... 149
External devices 154
Network (TCP/IP)..... 153
Network Version (Remote PC)..... 154
Serial interface (RS 232)..... 150
Serial interface (RS 485)..... 151
Operating hours and event counter . 123
Overview of all test units 55
Program start-up
Software 17
Units 17
Software updates 159
Software information..... 160
Support section on the Internet..... 159
Special menus for particular test unit types 143
Starting test programs (automatic) .. 111
Append a measurement..... 112
Automatic mode..... 115
Comment..... 113
Display for the recording..... 115
Display for the starting time..... 115
Program Offset 114
Program Start 114
Recording all ... seconds..... 113
Recording the test-cycle program 112
Selection the test-cycle program..... 111
Start options 114
Status overview
Analogues channels 31
Automatic quick-start selection 25
Changing a set value 31
Changing a Softkey 30
Digital channels 30
Disable control terminal 32
Error list..... 33
Error status..... 23
Indicators..... 30
Messages..... 29
Operational status..... 23
Preface..... 19
Program automatic 26
Softkeys..... 30
Symbol and menu bar..... 20
Test Units 21
Trend graph..... 27
Unit and error status..... 23
Unit information..... 22
System requirements..... 7
Table of Contents..... 3
Temperature Shock Test Cabinets ...143
Automatic 148
Manual and program operation.....148
Overview menu 143
Pretempering.....144
Program start 146
Test program creation 147
Test-cycle program editor
Buttons..... 59
Call Subprogram 75
Change line..... 60
Changing a value line..... 66
Comment..... 87
Conditional jump..... 76
Convert program lines? 80
Copy lines 61
Cursor Net..... 81
Cut lines 62
Delete lines 61
Delete test program..... 70
Edit a block of lines 72
Edit lines..... 60
Edit multiple lines 61
Expand all loops..... 79
Generate a test cycle..... 60
Insert line/change graph..... 64
Insert Program..... 77
Insert value line 60, 64
Loop (loop beginning and end)..... 74
New test program..... 69
Open test program 69
Options..... 79
Past copied lines..... 62
Preface..... 57
Print as PDF..... 72
Print both (graph and list) 72
Print graph..... 71
Print list 72
Print screen..... 72
Printer page setup..... 71
Printer/page setup and print 71
Programs in unit..... 81
Read proglist of contr. 81
Retroactively insert a values line ..67, 68
Save (as) test program..... 70
Save file as library..... 86
Save file in data pool..... 86
Scaling 80
Set Gradient..... 82
Software limit..... 63
Templates 78

Time Axis 80
Zoom functions 88
Uninstall 15
Visualization
Aspect ratio 140
Background Image 139
Buttons 137
Configure setting 139
Display Test Units 142
Display the visualization 138
Load setting 142
Moving the mouse 138
Preface 137
Reset setting 142
Save setting 141
Test Units 140
Visualization functions 139
Window Size (width x height) 139
Wait function 62
Zoom
Full screen 90, 98
Zoom 90, 98
Zoom out 90, 98

10 Technical support

Please visit our website at www.cts-umweltsimulation.de for more information about CTS GmbH and CID-Pro 4.02 software. It delivers the latest information on the continuing development of the company and of CID-Pro 4.02 software.

Our distribution partners in over thirty countries stand ready in word and deed to answer licensing and acquisition questions concerning our software. You can find our partner names and addresses in website's contact area. We are glad to refer you to a partner in your area.

CTS GmbH
Lotzenäcker 21
72379 Hechingen
Germany

Tel.: **+49 (0) 74 71 / 98 50 0**
Fax: **+49 (0) 74 71 / 98 50 23**

E-mail: **info@cts-umweltsimulation.de**
Web: **www.cts-umweltsimulation.de**